

R E P O R T R E S U M E S

ED 002 868

24

THE OCCUPATIONAL ASPIRATIONAL SCALE--THEORY, STRUCTURE, AND CORRELATES OF AN INSTRUMENT DESIGNED TO MEASURE DIFFERENTIAL LEVELS OF OCCUPATIONAL ASPIRATION, FINAL REPORT.

BY- HALLER, ARCHIBALD O. AND OTHERS

MICHIGAN ST. UNIV., EAST LANSING

REPORT NUMBER CRP-412

PUB DATE 28 FEB 61

EDRS PRICE MF-\$0.54 HC-\$13.64 341P.

DESCRIPTORS- *OCCUPATIONAL CHOICE, *ASPIRATION, *MEASUREMENT INSTRUMENTS, *FACTOR ANALYSIS, EDUCATIONAL EXPERIENCES, EMOTIONAL EXPERIENCES, SOCIAL EXPERIENCES, HIGH SCHOOL STUDENTS, GRADE 12, OCCUPATIONAL ASPIRATION SCALE (OAS), MICHIGAN, EAST LANSING

A STUDY WAS MADE TO DEVELOP A QUICK AND ACCURATE METHOD FOR MEASURING OCCUPATIONAL ASPIRATIONS, ADDING TO KNOWN EXPLANATORY AND PREDICTIVE TECHNIQUES CONCERNING THE OCCUPATIONAL SELECTION PROCESS. "LEVEL OF OCCUPATIONAL ASPIRATION" (LOA) WAS THE CONCEPTUAL FOCAL POINT OF THIS PROJECT. SUBJECTS OF THE PROJECT, APPROXIMATELY 450 17-YEAR-OLD BOYS, WERE TESTED USING THE "OCCUPATIONAL ASPIRATION SCALE" (OAS). IN ADDITION, THEY WERE ADMINISTERED THE FOLLOWING INSTRUMENTS--(1) "16 PERSONALITY FACTOR TEST" (FORM B), (2) CATTELL'S "TEST OF G-CULTURE FREE," (3) "CALIFORNIA TEST OF PERSONALITY," (4) "MSU WORK-BELIEFS CHECK-LIST," AND (5) A QUESTIONNAIRE ON EDUCATIONAL AND OCCUPATIONAL ASPIRATIONS, FAMILY BACKGROUND, AND SOCIOMETRIC DATA. THE OAS WAS ALSO ADMINISTERED TO APPROXIMATELY 110 JUNIOR AND SENIOR HIGH SCHOOL BOYS TWICE ABOUT 10 WEEKS APART TO PROVIDE STATISTICS FOR A TEST-RETEST RELIABILITY ANALYSIS. RESULTS OF THESE SAMPLES WERE THEN CORRELATED, AND EVALUATION TECHNIQUES WERE EMPLOYED FOR THE OAS IN TERMS OF--(1) RELIABILITY AND VALIDITY, (2) FACTORIAL STRUCTURE, AND (3) CORRELATION WITH SELECTED PERSONALITY VARIABLES, PARENTAL SOCIAL CLASS STATUS, AMBITION FOR YOUTH, AND LEVEL OF OCCUPATIONAL ASPIRATION OF A YOUTH'S BEST FRIENDS. IT WAS FOUND THAT OAS HAS A STRUCTURE WHICH DOES JUSTICE TO THE VARIOUS ELEMENTS OF THE LOA CONCEPT AND HAS A DESIGN WHICH MAKES IT A PRACTICABLE INSTRUMENT FOR RESEARCH AND FOR COUNSELING WHEN EVALUATED SPECIFICALLY FOR THIS LATTER PURPOSE. THE MOST PRESSING UNRESOLVED PROBLEM OF THE OAS WAS THAT OF ITS UNKNOWN PREDICTION VALIDITY. (JH)

ED002868

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education

This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

MICHIGAN STATE UNIVERSITY

The Occupational Aspiration Scale:

Theory, Structure, and Correlates of an Instrument Designed
to Measure Differential Levels of Occupational Aspiration

Final Report of a Study
of the
Relation of Occupational Aspiration to
Educational, Social, and
Psychological Factors

February 28, 1961

Project Director: Archibald O. Haller

Senior Research Assistant: Irwin W. Miller

Staff

Arturo De Hoyos

Carole Ellis Wolff

Henry Watts

Charles E. Butterworth

Jeanette Jennings

Jane Monahan

Dorothy Tervo

The research reported herein was performed
pursuant to a contract with the

UNITED STATES OFFICE OF EDUCATION
DEPARTMENT OF HEALTH EDUCATION AND WELFARE
in cooperation with the
MICHIGAN AGRICULTURAL EXPERIMENT STATION

TABLE OF CONTENTS

Acknowledgements	iii
List of Tables	iv

PART I. THE CONCEPT AND MEASUREMENT OF LEVEL OF OCCUPATIONAL ASPIRATION

Chapter I : Introduction	2
Chapter II : Conceptual Analysis of Level of Occupational Aspiration	6
Chapter III : Techniques for Measuring Level of Occupational Aspiration	19
Chapter IV : Correlates of Level of Occupational Aspiration	33
Chapter V : Design of the Occupational Aspiration Scale	67
Chapter VI : Internal Characteristics of the Occupational Aspiration Scale	85
Chapter VII : Correlates of the Occupational Aspiration Scale	123
Chapter VIII: Conclusion	132
Bibliography	139

PART II. RESEARCH APPLYING THE LEVEL OF OCCUPATIONAL ASPIRATION CONCEPT

Report I : A. O. Haller, "Research Problems on the Occupational Achievement Levels of Farm-Reared People." (Reprinted from <u>Rural Sociology</u> 23:4, December, 1958, pp. 355-362)..	144
Report II : A. O. Haller, "Planning to Farm: A Social Psychological Interpretation." (Reprinted from <u>Social Forces</u> , 37:3, March 1959, pp. 263-268)	151
Report III: A. O. Haller, "The Occupational Achievement Process of Farm-Reared Youth in Urban-Industrial Societies." (Reprinted from <u>Rural Sociology</u> , 25:3, September, 1960, pp. 321-333).. . . .	165
Report IV : A. O. Haller and C. E. Butterworth, "Peer Influences on Levels of Occupational and Educational Aspiration." (Reprinted from <u>Social Forces</u> , 38:4, May, 1960, pp. 289-295).	184

TABLE OF CONTENTS - Continued

	Page
Report V : A. O. Haller, William H. Sewell and I. W. Miller, "The Factorial Structure of Level of Occupational Aspiration" . . .	201
Report VI: Irwin W. Miller, "Occupational Aspiration V Achievement, and Peer Group Membership"	212

APPENDICES

Appendix I : INFORMATION ON THE OCCUPATIONAL ASPIRATION SCALE	1
Occupational Aspiration Scale	2
Normalized Data for O.A.S. Raw Scores	7
Scoring Instructions	12
Correlational Data on the OAS and Other Variables	13
Variable Identification for Correlation Matrix	14
Appendix II : UNPUBLISHED QUESTIONNAIRES USED IN THE LENAWEЕ COUNTY STUDY .	17
MSU Work Beliefs Check-List	18
Scoring Key for the MSU Work Beliefs Check-List	21
The Occupational Plans of Michigan Youth	24
Appendix III: OPERATIONAL DEFINITIONS OF VARIABLES USED IN THE LENAWEЕ COUNTY STUDY: THE PUNCH-CARD CORDING KEY	36
Appendix IV : PROJECT PROPOSAL (APPENDIX A OF THE HEW-MSU CONTRACT)	99
Appendix V : MEANS AND STANDARD DEVIATIONS OF LENAWEЕ COUNTY RAW DATA . . .	106

LIST OF TABLES

Table

PAGE

1. Inventory of the National ACKNOWLEDGEMENTS Occupational Research
Survey and Their Use in the OAS

2. OAS Methods: Description of Sampling Levels and Time-Periods for
Each of

The writers are indebted to a number of persons and agencies for help on this project. They include both the Cooperative Research Branch of the United States Office of Education and the Michigan State University Agricultural Experiment Station, as well as the students and school officials of Lenawee County, Michigan and Mason, Michigan. They also include the personnel of Michigan State University's Social Research Service Laboratory, Tabulating Service, and MISTIC Computing Service. A special debt is owed to Professor William H. Sewell of the University of Wisconsin for many of the ideas incorporated in the report as well as for previously unpublished data from his research projects, especially material presented in Part I, Chapter IV, and in Part II, Report V. To these and to our many stimulating colleagues and students at Michigan State University, the writers extend their grateful thanks.

Archibald O. Waller

Irwin W. Miller

LIST OF TABLES

Table		Page
	PART I	
1.	Summary of the Relation Between the NORC Occupational Prestige Scores and Their Use in the OAS	71
2.	OAS Format: Combination of Expression Levels and Time-Periods for Each of the Four Question-Wordings	76
3.	OAS Format: Distribution of 80 NORC Occupations Among the OAS items .	78
4.	Distribution of Prestige Scores of Occupational Titles for Each OAS Item	80
5.	Descriptive Statistics for the OAS	91
6.	Format for Dividing the OAS into Two Parallel Halves	93
7.	Order of Response Alternatives for Forms X and Y of the OAS, by Stimulus Question Content	94
8.	Selected Statistics for Equivalent Halves of the OAS: Lenawee and Mason Samples	95
9.	Means, Standard Deviations, Standard Error of the Means, and Standard Error of Mean Difference for Two Forms of the OAS Based on the Total Score: Mason Sample Only	97
10.	Reliability Coefficients and Standard Errors of Measurement for the OAS	98
11.	Mean Scores for All Combinations of Expression Levels and Time-Dimension Periods: Lenawee and Mason X and Y Samples	104
12.	OAS Item Correlation Matrix: Lenawee Sample	107
13.	OAS Item Intercorrelations: Mason Form X Sample	108
14.	OAS Item Intercorrelations: Mason Form Y Sample	109
15.	OAS Factor Matrix: Lenawee Sample	110
16.	OAS Factor Matrix: Mason Form X Sample	111
17.	OAS Factor Matrix: Mason Form Y Sample	112
18.	Intercorrelations of Responses to the North-Hatt Free-Response Instrument (X_1-X_5) and the OAS (X_6-X_{13})	114

LIST OF TABLES - Continued

Table	Page
19. North-Hatt Free-Response LOA Instrument Factor Matrix: Lenawee Sample	115
20. North-Hatt Free-Response Instrument (X_1 - X_5 and OAS (X_6 - X_{13}) Inter-Technique Factor Matrix: Lenawee Sample	117
PART II	
Report I	
1. Relation of Plans Regarding Farming to Level of Occupational Aspiration Scores, by College Plans	148
Report II	
1. Summary of Hypotheses and Tests Concerning Planning to Enter Nonfarm Work	164
Report III	
1. Variables Related and not Related to Plans Regarding Farming as a Vocation	183
Report IV	
1. Mean Level of Aspiration Scores, Number of Peer-Pairs, and Number of Subjects, by Type of Aspiration and by Control Variable Categories	199
2. Intraclass Correlation (R) of Peer-Pairs' Levels of Occupational and Educational Aspiration, by Categories of SCS, G, and PAD Control Variables	200
Report V	
1. Correlation Matrices of North-Hatt Ratings of Occupational Choices	208
2. Rotated Factor Matrices	209
Report VI	
1. Means and Standard Deviations for the OAS and the V Achievement Scale .	215
2. Correlations between OAS Scores and V Scale Scores	216
3. Intraclass Correlations for the OAS and the V Achievement Scale for Members of Peer Groups	216

CHAPTER 1

Part I

INTRODUCTION

In societies like the United States, a person's occupation exerts a powerful influence on his life. It provides a learning situation which controls his thoughts and emotions. It controls the character of his interaction with other people. It provides the financial base which limits and directs his style of life.

At present we do not have a valid theory to explain and predict exactly what occupation a person will enter or how he will behave. We have a small measure in the explanatory and predictive power of our knowledge about the occupational selection process. The present monograph attempts to add such a small increment to our knowledge. It does this by applying levels of cognitive theory and attitude theory to the measurement of just one dimension of the occupational selection process. The dimension to which we refer is the person's level of occupational aspiration as compared to that of his fellows, which we shall call *relative aspiration* or, more frequently, *relative life*.

Life is not a new concept. By one way or another it has been used many times. It is a broad term for considerable sociological concepts including work, ability, and the kind of response to these concepts in individual behavior. It is related to a number of the key theoretical concepts in social psychology and sociology. It is a concept which may be stated operationally, or it may be stated in terms of a goal or concept or the underlying. Thus the theory and the practice, life is a complex of sociological processes.

CHAPTER I

INTRODUCTION

In societies like the United States, a person's occupation exerts a pervasive influence on his life. It controls the amount of time he may spend freely. It provides a learning situation which controls his thoughts and emotions. It controls the character of his interaction with other people. It provides the financial base which limits and directs his style of life.

At present we do not have a valid theory to explain and predict exactly what occupation a person will enter; we may never have. But even a small increase in the explanatory and predictive power of our knowledge about the occupational selection process may be useful. The present monograph attempts to add such a small increase to our knowledge. It does this by applying level of aspiration theory and attitude theory to the measurement of just one dimension of the occupational selection process. The dimension to which we refer is the person's level of occupational aspiration as compared to that of his fellows, which we shall call differential LOA or, more frequently, simply LOA.

LOA is not a new concept. By one name or another it goes back many years. It is a focal point for considerable sociological research concerning vertical mobility, and it has been of concern to those interested in vocational counseling. It is related to a number of the key theoretical concepts in social psychology and sociology. It is a concept which may be stated operationally, so as to permit its use as a tool for research or for counseling. Thus for theory and for practice, LOA is a concept of considerable promise.

But its promise has remained largely unfulfilled. This is because of the unavailability of an adequate instrument ^{measure} to/it. In turn, this is due partly to the lack of a clear theory which would show exactly what should be measured, and partly to the lack of a practicable way to elicit LOA responses from individuals.

Purpose of this Monograph

The objective of this monograph is to present and evaluate an instrument which is believed to be an adequate measure of LOA. By now the outlines of the necessary theory have emerged. The monograph will show how the outlines have been drawn into an explicit statement, and how it has been applied to suggest occupational stimuli and techniques for classifying responses to them, ultimately yielding a reliable, apparently valid, and simple instrument for measuring LOA. The instrument is called the Occupational Aspiration Scale (Haller, 1957), or more familiarly, the OAS.

Organization of the Monograph

The monograph is in two main divisions, Part I and Part II. It also includes four appendices. Part I presents the substance of the argument, and it may be read by itself. Ensuing chapters in Part I will present the following. Chapter Two is a theoretical discussion of the concept LOA, which shows how the concept is linked to more general level of aspiration theory and to social stratification, as well as to other concepts in social psychology and sociology. Stress is laid upon a formulation of the concept of LOA which will permit specifying the operations required for measuring its referent. Chapter III will present concepts for describing LOA instruments, and will go on to/a critical discussion of most of the techniques which are available to measure LOA. Chapter IV will present a series of hypotheses

concerning the correlation of LOA with other variables, and will present tests of these hypotheses based on extensive data, much of it previously unpublished. This analysis will show that LOA behaves predictably, confirming the belief that a practicable instrument for measuring it has considerable potential usefulness. Chapter V will describe the OAS, an instrument designed in terms of the theory described in Chapter II and of the concepts presented in Chapter III. Chapter VI will present the results of analyses of the reliability and internal evidences of validity of the OAS. Chapter VII will present a study of the correlates of the OAS, performed in a way which is parallel to Chapter IV and which also compares the correlation of the OAS with the best of previous LOA instruments. Chapter VIII concludes Part I.

Part II presents six research papers using the OAS. The first three are a trilogy which delineate a problem concerning the occupational achievement levels of farm-reared youth (Report I), show differences between farm boys who do and do not plan to become farmers (Report II), and present a new explanation for the farm-reared youth's low levels of occupational achievement (Report III). The OAS is an important variable in these analyses. Report IV is a test of the hypothesis that youth who are close friends tend to have similar levels of occupational and educational aspiration. Again, the OAS is a crucial variable. Report V is an analysis of another way of measuring LOA. It shows that responses to a certain type of LOA questions behave similarly at two different times and places. Report VI is a study presenting the correlation of achievement value (v-achievement) with LOA as measured by the OAS, and also verifying part of the conclusions reached in Report IV.

The Appendix I presents the OAS forms, OAS standardization data, and the OAS scoring key. Appendix II presents unpublished forms used in the research upon which most of the data in the monograph are based. Appendix III is the coding key for the

study; it specifies the operational definitions of all the variables used.

Appendix IV is the Michigan State University research proposal to the United States Office of Education, Cooperative Research Branch, which is the basis of the present monograph. Interim progress reports are also included in this appendix.

The General Concept "Level of Aspiration"

There are a number of important works on the general concept of level of aspiration. These include Luria (1937), Gierke (1948), Lewis et al. (1951), Lewis (1951), Festinger (1953). As it is presented in these works, the concept level of aspiration includes several elements. At perhaps the most fundamental level, the term indicates that one or more persons are oriented toward a goal. All of which this, is that both the goal and the person's orientation to it are specified. (1) The person's goal is a selection of one among the alternative behavior levels that are possible with respect to an object. These alternative behavior levels vary in the degree to which they are difficult to achieve. That is, the alternatives are ranked in a position of difficulty. (2) The person's orientation is variable in two ways, one of which has received considerable attention in the literature, and the other has been ignored. (2a) The person's orientation is variable in that the central tendency may lie at any point or limited range of points along the continuum of difficulty. The central tendency of the person's orientation is the point or limited range of points which has the highest salience for him. This is the person's level of aspiration. The term differential level of aspiration logically implies variation in the point of salience when it is estimated at different times on the same person, or at the same or different times on different persons. In this monograph,

CHAPTER II

CONCEPTUAL ANALYSIS OF LEVEL OF OCCUPATIONAL ASPIRATION

The purpose of this chapter is to examine the general concept "level of aspiration," to show its implications for LOA, and to show the various social psychological concepts related to LOA.

The General Concept "Level of Aspiration"

There are a number of important works on the general concept of level of aspiration. These include Lurie (1939), Gardner (1940), Lewin et al. (1944), Irwin (1951), Deutsch (1954). As it is presented in these works, the concept level of aspiration includes several elements. At perhaps the most fundamental level, the term indicates that one or more persons are oriented toward a goal. But it is more than this, in that both the goal and the person's orientations to it are complex. (1) The person's goal is a selection of one among the alternative behavior levels that are possible with respect to an object. These alternative behavior levels must vary in the degree to which they are difficult to achieve. That is, the alternatives are ranked in a continuum of difficulty. (2) The person's orientation is variable in two ways, one of which has received considerable attention in the literature, and the other has been ignored. (2a) The person's orientation is variable in that its central tendency may lie at any point or limited range of points along the continuum of difficulty. The central tendency of the person's orientation is the point or limited range of points which has the highest valence for him. This is the person's level of aspiration. The term differential level of aspiration logically implies variation in the point of valence when it is estimated at different times on the same person, or at the same or different times on different persons. In this monograph,

the term is restricted to variations among persons. (Most of the time we have used a short form, levels of aspiration or levels of occupational aspiration. This really means differential levels of aspiration among persons.) (2b) The person's orientation is variable in a second way. The central tendency may vary in amount of dispersion, the degree to which it is concentrated at a single point, or varies over a range of points on the continuum of difficulty. Although its possibilities have not been fully exploited, the dispersion aspect has been recognized in the literature by many references to the different types of levels. Those who study level of aspiration speak variously of preference levels versus expectation levels, plan levels versus "aspiration" levels, "valence" levels versus subjective probability levels, ideal versus action goals, long-range versus short-range goals. It appears to the writers that all of these types of levels or goals have one meaning in common: almost all writers agree that each person has a range of goal-levels within which the valences of all particular goal-levels is relatively high; few view the person's level of aspiration as being concentrated on a single point. Among those who recognize the existence of a range rather than a point, there are two different emphases. Some stress variations in the level of aspiration at one time. These writers use terms such as preference versus expectation, and the like. Others stress variations in the level of aspiration at different times.¹ These writers use terms such as short-range versus long-range.

¹There is another distinction often thought to be of importance. This is the success-failure dimension. In the resultant weighted valence (RW) model, the "valences" and "subjective probabilities" of success and failure are combined to produce an RW score for each level of goal difficulty. The writers believe that occupational behavior, the utility of this distinction and the weighting of goal valences which flows from it has yet to be demonstrated. (Alexander, 1959). For this reason, it is not discussed further in the present monograph. Perhaps future research will show it to be useful.

Clearly, in perhaps most of the areas where the level of aspiration concept is appropriate, the individual's level of aspiration may vary in each way. He may have a range of aspirations, with rough upper and lower boundaries, and the whole range may vary according to whether he is concerned with his goals for the immediate future or for some more distant time. These two aspects of level of aspiration differ from each other, and they are equally important. People often distinguish between what they hope they can do and what they are sure they can do, and between their short and long-range hopes and expectations. Both aspects will be used in this monograph. A terminology to express these variables follows: Operational definitions designed to estimate the points which bound the range of a person's level of aspiration at any one time will be called expression levels. Estimates of the lower and upper boundaries will be called the realistic and idealistic expression levels, respectively. Operational definitions designed to estimate a person's level of aspiration at different times will be referred to as time-dimension periods. Estimates for future times that are near or distant will be called short-range and long-range time-dimension periods, respectively.²

²It will be noted that the distance between expression levels and the distance between time are both variable. The full implications of this have not been explored in the literature, although there are many suggestions that these variations may be important. Quite different behaviors, (in occupational and educational areas of behavior, for example) may occur when expression-levels are widely-spread rather than narrowly concentrated, when realistic expression-levels are higher than idealistic levels, when short-range and long-range time periods are close together rather than far apart. Also, if we can believe the speculative literature, the child's expression-levels are widely separated. At what age do expression-levels tend to converge on a point? Research should be conducted to answer these and a number of other questions.

The Special Concept of "Level of Occupational Aspiration"

The concept "level of occupational aspiration" (abbreviated LOA) is a special instance of the more general concept. It differs from the general concept only in that it takes as its object the occupational hierarchy, and that the continuum of difficulty consists of the various levels along the hierarchy. The particular dimension which is most appropriate for ordering occupations in a hierarchy is a matter of considerable disagreement in the literature, as is the most appropriate technique for measuring the dimension. These issues will be discussed separately.

Many different dimensions have been proposed as the most adequate for ordering occupations in a hierarchy. These have been reviewed by Caplow (1954), Davies (1952), and Super (1957). They include income, intelligence, interests, special skills, required education, personality, and prestige (or societal evaluation). There is no readily observable hierarchy in two of the above, interests and personality; if various interests or "elements" of personality are arranged hierarchically, the hierarchy is based on one of the others.

Of the above dimensions, those which are the most obviously hierarchical, such as average income per occupation and average prestige per occupation, average intelligence per occupation, and average education per occupation are probably very highly inter-correlated. This assumption may be true or false; so far as the writers know there are no published data testing it. If it is true, it will make little difference which of several variables is selected to be the hierarchical dimension of LOA. If it is false then the decision as to which to use must be based on other criteria. In this case, one may turn to sociological theory of stratification. Stratification theorists generally agree that differential societal evaluation of occupations, or occupational prestige, is the most adequate way of placing them in a

hierarchy (Kahl, 1957). We conclude that the continuum of difficulty of LOA consists of a hierarchical dimension of occupations, and that occupational prestige is an appropriate way to arrange occupations in a hierarchy. It is at least as adequate to serve this purpose as are other hierarchical dimensions; and it may even be better.

There are many studies of the differential prestige of occupations. Those available when his volume was published were reviewed by Davies (1952); later studies, including an especially important one by Inkeles and Rossi (1956), are reviewed by Ramsey and Smith (1960). Generally, these studies show that similar occupational titles have nearly equivalent ranks among various industrial or Westernized societies, and that these ranks have been relatively stable (at least within the United States) for the last generation.

Since differential social evaluation is the basis for rank-ordering occupations according to prestige, it follows that the best technique for measuring the variable is that one which yields the rankings assigned to the widest variety of occupations by all elements of the total population of a society. For the United States, the study producing the most complete information on the occupational hierarchy was done by means of a quota-controlled national sample of adults (age 14 and over) numbering 2,920 persons (MORC, 1947). In this study, the respondents rated each of ninety occupations, representing all levels from day-labor to top business and professional, according to a five-point scale of "general standing."³

³The exact question-wording was: For each job mentioned, please pick out the statement that best gives your own personal opinion of the general standing that such a job has.

1. Excellent standing
2. Good standing
3. Average standing
4. Somewhat below average standing
5. Poor standing
- X. I don't know where to place that one.

The respondents' scored estimates of an occupation were then averaged, and the average scores were placed in rank-order. Thus, NRC scores (also called North-Hatt scores) are the best available means for operationalizing the continuum of difficulty of LOA.

In summary the LOA concept is logically a special instance of the concept of level of aspiration. Its special nature consists only in that its continuum of difficulty is the occupational hierarchy.

It may be that any adequate measure of dimensions resulting in a hierarchy of occupations produces the same rank-ordering of occupations, but this is not known to be true. In any case, occupational prestige is at least one adequate dimension. The best measure of this for American society, and the one we shall use as the basis for the Occupational Aspiration Scale described in this monograph and will use to evaluate other LOA instruments, is the NRC ranking.

Concepts and Research Areas Related to LOA

Concepts Related to LOA. Modern behavioral science seems to be in the interesting position of having a large number of traditions that are somewhat isolated from each other, but which have quite similar content. Each uses somewhat different terms, but there is much agreement as to central concepts. The basic similarity of many concepts, however, is somewhat obscured by their differing names. Others are different but logically related to each other. Our purpose in this section is to sketch the relationships of LOA to a number of the more important related concepts and research areas drawn from a variety of traditions. It should be emphasized that we have no intention of trying to place LOA in any single unified theoretical system. We have already shown that LOA is a special instance of level of aspiration. We

shall try to show below that LOA may also be interpreted as an attitude. The concept of attitude has found rather wide agreement in meaning, at least operationally, throughout the behavioral sciences. Because LOA is, we believe, an attitude, a concept shared by all behavioral "systems," it is not necessary to tie LOA with any one point of view. But it is useful to show, as we mentioned above and as we shall spell out below, why LOA may be considered to be an attitude, and to show wherein it parallels or fits logically with other concepts and research areas.

Like all attitudes, LOA is personal orientation to action with respect to a social object. As an orientation to action, it represents the person's conception of and desire for a future state. (Peak, 1955, Edwards, 1957.) The social object is the occupational structure, with particular occupations ranked from highest to lowest in terms of prestige. A person's LOA thus stands for his orientation to action with respect to a point or a limited range of points on the occupational prestige hierarchy. But one question which may be raised is whether a point in or range of occupational prestige hierarchy may be considered to be a real object. This may be answered by noting an old principle in the behavioral sciences which holds that when people define something as real, it is real in its consequences. (Merton, 1937, pp. 421 ff.) Thus if people act as though a concept has reality, it in fact has a certain reality. If people act as though they refer their behavior to something we call an occupational prestige hierarchy, then the hierarchy is an object of logical status equal to that of other objects. Considerable evidence shows that they do act in this way. LOA, then, has a general object which is the entire occupational prestige range, and a particular object which is the person's own point or limited range of orientation. Evidences concerning the shared definitions of occupational prestige are many. As we have noted earlier, several recent studies show that occupations are differentially ranked

and that people in urban-industrial social systems have relatively similar prestige evaluations of translatable occupational titles. Inasmuch as these occupational prestige ratings are based upon persons' relative rankings of particular occupations, it follows that any particular point or rank can also be an object.

LOA differs from most attitudes, however, in that its general object, the occupational prestige hierarchy, contains all possible alternative specific objects of the attitude, and in that these alternatives are rank-ordered. Ordinarily, orientations are ranked, such as from "favorable" to "unfavorable," toward only one object. LOA's general object is—or specific objects are—as variable as is LOA's orientation aspect. Here, too, an objection may be raised. It might be argued that LOA is not an attitude; that in fact LOA differs from an attitude in that the latter's object is constant while its orientation aspect is variable, while the former's object is variable while its orientation aspect is constant. But LOA's orientation is not really as constant as it may seem; to choose one level as relatively desirable is to imply that other levels are relatively undesirable.

LOA is closely related to the concept of goal. A goal may be considered to be a special kind of object toward which the person has a favorable attitude. Attitudes may vary toward an object conceived as a goal, but only in the degree to which they are favorable. They are not unfavorable. But LOA's particular objects are more complex in that they are alternatives. The particular one chosen may be considered a goal, but the rest of the alternatives are not necessarily viewed even as substitute goals by any one person. He will reject some altogether. Only the particular rank to which the person is oriented may be considered to be a goal for him.

The concept "value" is used in at least two different ways. For one it is sometimes used to indicate that which has positive affect for the person. Since a person's LOA is a desired level, it may be considered to be a value for him in this

sense of the term. LOA is also related to the concept of personal value orientation. In the writers' opinion the value orientation of the person may be considered to be his attitude toward a widely accepted cultural value. A cultural value, in turn, may be considered to be a societally-defined maxim holding that a certain behavior or object is inherently good. Insofar as high occupational prestige levels are cultural values, then a person's LOA may be considered to be his value orientation with respect to the higher levels.

In addition, LOA bears a resemblance to the concept of the plan when the latter is used as a noun. Generally, a plan refers to a more or less clearly conceptualized course of action, perhaps involving many constituent acts each with its sub-goals, which is instrumental in realizing a goal. Hence an occupational plan is held to be a conceptualized course of action thought by the person to be instrumental in entering an occupation. Similarly, a person may desire to achieve a certain occupational prestige level, and may map out a course of action for doing so. This would be a plan for achieving an LOA. Naturally, a number of alternative plans may be formulated for realizing the person's LOA; some of these may be exceedingly complex. By way of an example, plans could include working to earn money to go to college to get a good job,

Motivation is a concept which is used in many ways. LOA bears a resemblance to some, but not all, of these. Perhaps the two uses of motivation most nearly akin to LOA are the "sociogenic motive" of the Sherifs (1956) and the "n-achievement" of Murray (1938) and McClelland, *et al.* (1953). The former is really another use of the term attitude. In this formulation attitudes toward social objects are sociogenic motives. They are held to be motives because it is believed that attitudes serve to mobilize and direct energy into action with respect to their objects, thus providing motive power for action; they are held to be sociogenic because attitudes are held to be learned in interaction with other persons. Since LOA is an attitude variable, it may be considered to be a sociogenic motive in the Sherifs' sense of the term.

McClelland, (1953), Rosen (1959), and others have attempted to show how ethnic and religious traditions, long held to be related to economic rationality in Western Europe and North America, are manifested first in child training practices and later in the person's desire for excellence in performance. These workers held that H. A. Murray's n-achievement--a non-conscious tendency to behave in accord with high internally-set standards--influences all aspects of performance. In particular, high n-achievement is held to influence behavior at work and in training for work. Evidently then, persons who are high in n-achievement would be expected to learn and to put into action more effective work-practices than others do, and for this reason it would be expected that n-achievement should influence prestige levels^{of}/occupational achievement, and levels of educational achievement as well. To the degree that it has this objective, it serves some of the same aims as LOA does. It differs from LOA, however, in at least two related ways. Like other attitudes, LOA assumes that the occupational prestige hierarchy and specific ranges along it become objects to which the person relates himself either positively or negatively. But n-achievement apparently has no particular object, being concerned only with excellence of performance applying to many objects. Secondly, since n-achievement refers to the quality of performance, rather than to the occupational hierarchy, it should follow that it is most effective as a predictor of the excellence of work in whatever occupation the person finds himself, whether it is shining shoes, or making foreign policy decisions. LOA, of course, should be most effective as a predictor of the prestige level of the occupation the person takes. It is therefore doubtful that n-achievement would be particularly highly correlated with occupational prestige level, or that LOA would be particularly highly correlated with the quality of performance in a particular occupation. But this is not to say that they should be uncorrelated. Others usually have a stake in, and a degree of control over, a person's occupational

career. It is doubtful that many persons of low n-achievement would be permitted to attain high prestige occupations, and it is likely that a disproportionate number of those with high n-achievement would be advanced to higher positions. The connection between quality of performance - and, therefore, n-achievement - and levels of occupational achievement is probably visible to most persons. For this reason, n-achievement and LOA should each have a moderate and positive correlation with the behavior appropriate to the other. This has not been tested to date.

LOA is evidently related to concepts of self and role and through these to a third type of motivation. Probably most people in complex societies actually know very little detail about the role-behaviors associated with most occupations. Nevertheless they appear to believe they know the styles of life--an important aspect of role behavior--characteristic of each occupational prestige level. Clearly, this means that the person must view some levels as more appropriate for himself than others. This implies that to the degree that the person has a unitary LOA, he has a conception of himself in relation to the styles of life he imputes to the various levels of the occupational hierarchy. Hence LOA may be interpreted in terms of the person's self-concepts and in terms of his conception of certain roles he anticipates playing or desires to play sometime in his future.

This leads to two further considerations. First, Foote holds that self-conceptions direct energy toward action viewed as fulfilling the self-conception. (Foote, 1951). Thus he concludes that self-conceptions have motivation properties. If this is the case, then LOA may be interpreted as a third type of motivational concept. Second, Merton (1957) and Becker and Straus (1956), have pointed out that learning and identification with a role often begins long before the person formally begins to play the role. This has been called anticipatory socialization. Because LOA has been interpreted as an anticipated or desired future role, it may also be interpreted as an aspect of anticipatory socialization. (The fact that many fail to achieve their LOA's while a few others achieve higher positions than they expected or

wanted does not deny the fact of LOA's status as a type of anticipatory socialization. Indeed, this creates problems which themselves are worthy of study.)

As we have seen, LOA is an attitude which involves conception of the self in relation to a particular level of the occupational prestige hierarchy. But it is likely that this is a more abstract notion than people really have. More accurately, the individual's conceptions of the others he uses as referents doubtless consists of images of people who have characteristic styles of life. When a person uses a group as a reference point from which he evaluates himself or as a standard to direct his behavior the group is called a reference group (Merton 1957, pp. 225-386.) Evidently LOA is closely related to the reference group concept.

Research Areas Relating to LOA. From the preceding discussions it is clear that LOA is a part of attitude research in social psychology. It is clear, too, that it is closely related to stratification in sociology, for the occupational hierarchy is perhaps the most important facet of modern stratification (Kahl, 1957). It may also be interpreted as an aspect of other research areas. One of these, is the area called "social structure and personality." Most research concerning social structure and personality has been concerned with the impact of social structure on personality. But, as Inkeles (1959) has shown, this conception is unnecessarily limited. The personality orientations which operate to select persons into different segments of the total social structure must surely be considered an aspect of the interdependence of social structure and personality. While the occupational prestige hierarchy is by no means the only social structural variable worthy of study, it is one of the most important in urban-industrial societies. Similarly LOA is only one among many personality orientation variables, but it is important insofar as it controls or even merely predicts levels of occupational prestige achievement in urban-

industrial societies. Since LOA is a personality orientation which appears to influence the prestige level of attainment in the occupational hierarchy, it is logically part of the area of social structure and personality.

Social mobility research is the name given to the sociological area of inquiry which attempts to measure, explain, and predict downward and upward movement of persons, families or other sub-systems in the stratification order of total social systems. To the extent that studies of LOA assist in such measurement, explanation, or prediction, the concept LOA must be considered a contributor to ^{the} area of social mobility (Lipset and Bendix, 1959).

Summary of Concepts and Research Areas Related to LOA.

We have tried to sketch the relations of LOA to a variety of concepts and research areas. Theoretically, it derives from attitude theory and level of aspiration theory--which are, in turn, closely related. It also has affinities to the concepts of plan, value, self, role, motive, and anticipatory socialization. In application, it is logically a central focus in attitude research, stratification and research, social structure/ personality, and mobility research. We conclude that LOA is a concept deeply embedded in social psychology, and having wide application in sociological and social psychological research. Its possible application in counseling will be noted in a later chapter.

CHAPTER III

TECHNIQUES FOR MEASURING LEVEL OF OCCUPATIONAL ASPIRATION

In this chapter we shall describe the most widely or most successfully used techniques for measuring LOA. The description is based on a classification of techniques. In turn the classification is derived from general level of aspiration theory, from the application of the latter to LOA, and from considerations concerning psychological measurement. In the first section, we shall describe the basic terms of the classification and the consequences^{of} each sub-class for the measurement of LOA. In the second section we shall describe briefly the better known LOA techniques, and we shall evaluate each in terms of the classification system. The two existing commercial techniques--techniques which are produced for the market--will be described first and others will be described later.

A Classification of LOA Techniques

Basic Terms. The purpose of this section is to define the basic terms used below to describe and evaluate the different techniques presently available to measure LOA.

(A) Stimulus question. This term refers to any test item or question which is designed to elicit an LOA response.

(B) Direct vs. indirect techniques. These terms distinguish LOA instruments eliciting a response which can be assigned a score equivalent to the occupation's relative standing in the occupational hierarchy (direct techniques), from those eliciting responses which are assigned scores based on other criteria (e.g., interests) which are assumed to be related to the occupational hierarchy (indirect techniques).

(C) Continuous vs. categorical techniques for selecting items. These terms distinguish between LOA instruments the items of which are selected to discriminate along many levels of the occupational hierarchy (continuous), and LOA instruments the items of which are selected to discriminate between an occupational hierarchy which has only two or three gross levels (categorical).

(D) Single-vs. multiple-item design techniques. These terms refer to the number of stimulus questions used to elicit the person's LOA.

(E) Free response vs. structured response techniques. These terms distinguish among LOA instruments based on responses to open-ended questions (free response), and questions with pre-determined response alternatives (structured response).

(F) Response alternatives. This term applies only to structured response techniques. It refers to the battery of possible responses presented to the respondent. From among these he must choose the one which he believes to be most nearly appropriate for him.

(G) Expression levels. Defined in Chapter II, this refers to the stimulus question wording eliciting the two response levels of the level of aspiration model, realistic and idealistic.

(H) Time-dimension periods. Also defined in Chapter II, this term refers to the stimulus question wording eliciting long-range and short-range response levels. Regarding the LOA of youth, these terms refer to points in their work-careers, short-range indicating estimates for the time at which they first take a serious job and long-range indicating estimates for a time after they have become established in their occupations.

(I) Complete vs. incomplete techniques. These terms refer to the degree to which the stimulus questions of technique incorporate all aspects of the general level of aspiration model. A complete technique includes stimulus questions tapping each expression level and each time-dimension period. Incomplete techniques lack one or more of these aspects.

(J) Balanced vs. unbalanced techniques. These terms refer to the equality of the numbers of stimulus questions concerning each expression level and each time-dimension period. Techniques in which any one level and any one period are represented in stimulus questions as often as any other level and period are called balanced techniques. All others are unbalanced. It follows that only complete techniques can be balanced.

Consequences of Differences Among the Techniques. The key terms for distinguishing among techniques are the bi-polar concepts listed above. These are (B) direct vs. indirect techniques, (C) techniques based on continuous vs. categorical item selection methods, (D) single vs. multiple-item techniques, (E) free vs. restricted response techniques, (I) complete vs. incomplete techniques, and (J) balanced vs. unbalanced techniques.

1. (B) Neither direct nor indirect techniques are inherently effective or ineffective. But in practice direct techniques are more effective because they are explicitly derived from the occupational hierarchy. For this reason they have a clear relationship to LOA's continuum of difficulty. Indirect techniques could be based on direct techniques. If they are adequately designed--i.e., if they provide a method for assigning scores which are clearly related to the continuum of difficulty--they would perhaps be better than their direct counterparts, for an indirect technique can prevent faking. Direct techniques are subject to this difficulty because they permit the subject to choose any occupation that he wants to choose or that he thinks

a tester wants him to choose. But to date, indirect techniques are based either on interests which either have ^{been} found to be empirically related to gross categories of the occupational hierarchy (such as the Occupational Level--OL--Scale of The Strong Vocational Interest Blank; Strong(1946) or have apparently only been thought to be related to gross categories of the occupational hierarchy (such as the Level of Interest--LI--scale of the Lee-Thorpe Occupational Interest Inventory, Lee and Thorpe, 1954). To date, indirect techniques lack a clear relationship to an adequate measurement of LOA's continuum of difficulty.

2. (C) Gross categorical techniques for selecting items are clearly less adequate than are continuous techniques. This is because crude categories fail to detect real differences along the occupational hierarchy. At least part of this insensitivity is doubtless reflected in a corresponding insensitivity to differences in LOA. On the other hand, continuous techniques more accurately measure differences along the occupational hierarchy, and this accuracy is doubtless true of the measurement of LOA.

3. (D) Multiple-item techniques are probably more effective than single item because they make complete and balanced designs possible, because they yield an LOA score based on more than one estimate, and because they permit studies of internal consistency and internal structure. All of the above are precluded by single item techniques.

4. (E) Free response and structured response techniques each have their advantages and disadvantages. Free response techniques permit the subject to give a response which is exactly the occupation he wishes to choose; structured response techniques may not present any alternatives which are especially relevant to the respondent. However, free response techniques have some major practical drawbacks. For one, many respondents fail to respond in terms which

have a hierarchical occupational referent (for example, "get a job," "housewife," "go to work," etc.). For another, many hierarchical responses are impossible to code into specific LOA scores (for example, "business-man," "salesman," "engineer"). These difficulties result in a high proportion of unknown LOA's when the technique is used. They also mean that the free response techniques, though easy to administer, are hard to code. Structured response techniques overcome all of these difficulties.

5. (I) Neither the complete nor the incomplete technique is necessarily the more adequate. They differ in that complete techniques permit LOA measurement on all aspects of the concept, while incomplete do not. If the different expression levels and time-dimension periods have any functional significance, complete techniques will detect them and will therefore be more adequate. But if they do not have functional significance either type of technique will work satisfactorily.

6. (J) Balanced techniques are not inherently better than unbalanced. But if complete techniques are required then they should be balanced. This is because unbalanced techniques will tend to under-estimate (or over-estimate) the contribution to LOA which is made by the under-represented (or over-represented) aspect.

The Classification System. LOA techniques may be classified and described accurately enough for most purposes by means of the six bi-polar concepts listed above. That is, any one technique may be described as direct or indirect, categorical or continuous, multiple or single-item, free-response or structured response, complete or incomplete, balanced or unbalanced. All techniques known to the writers may be described in terms of only a few of the 64 possible combinations which result from the classification. More precisely, excepting the CAS (which will be described later) all existing techniques appear to be classifiable into

three types. These are (1) indirect, categorical, multiple-item, restricted response, incomplete, and unbalanced; (2) direct, continuous, single-item, free-response, incomplete, and unbalanced; and (3) direct, continuous, multiple-item, free-response, incomplete, and unbalanced.

Present Techniques

The following discussion will briefly review the most important LOA instruments in terms of the above concepts. Detailed descriptions, if they are available, may be found in the literature cited. We shall present first the instruments which are copyrighted and are available on the market, and second those which are not copyrighted and are available at no charge to the user.

Commercial LOA Instruments. There are apparently only two LOA instruments which are marketed. These are Strong's Occupational Level (OL) Scale (Strong, 1946) and the Lee-Thorpe Level of Interest (LI) Scale (Lee and Thorpe, 1956_b). Both are minor sections of more inclusive instruments designed to measure areas of occupational interest. These tests measure the extent to which an individual's interests are similar to, or different from, interests of persons who are known to be successful in certain occupational areas. Both may be classed as indirect, categorical, multiple-item, structured response, incomplete, and unbalanced techniques.

The OL scale is part of the Strong Vocational Interest Blank. The SVIB, as a whole, is described quite well by Super (1957), Darley and Hagenau (1955) and Barnett et al. (1952) and need not be described in detail here. Briefly, persons responding to it are asked to check Like-Indifferent-Dislike (L-I-D) for a series of occupational titles, school subjects, amusements, activities, and characteristics of people. In addition, the respondent rates himself on a list of interests,

preferences, personal abilities, and characteristics. The OL scores are then derived from interest scores in the manner described by Strong:

The occupational level (OL) scale was developed by identifying items which differentiated unskilled workers from the man-in-general group. A low score thus indicates interests similar to those of manual laborers; a high score means the person has responded to the items the way most business and professional men do.

Strong (1955, p. 127) presents the following reliability data for the OL scale among students first tested when in college:

Procedure	Sample	Reliability
Test - retest (5 years)	Seniors	.71
Test-- retest (19 years)	Freshmen	.53
Test - retest (22 years)	Seniors	.57
Odd - even	--	.87

Two types of direct evidence suggest that the validity of the OL scale is not high. (1) Strong states that the predictive efficiency of the OL scale (in terms of occupational achievement) is poor when compared with predictions based on interest areas. (2) Lee and Thorpe (1956_a) find a quite low correlation of +.13 between the OL scale and the LI scale of the OII based on a sample of sixty veterans. Moreover, the indirect evidence presented in the next chapter seems to show that the OL scale is not one of the more accurate measures of LOA.

The Lee-Thorpe LI Scale is described in a manual (1956_a). The mechanics used in the OII to obtain LI scores are different from those of the SVIB. The OII has a separate section for the purpose of measuring level of interest. This section is made up of 30 forced-choice triads, five triads for each of the six major interest fields assessed by the OII. Each triad consists of three statements concerning activities in the same interest area but differing with respect to the degree of skill involved. For example, the instructions and one triad from the LI section are as follows:

Below you will find three activities under each number. You are to choose the one you prefer to do of the three in each group. Indicate your choice by marking the letter preceding the activity.

1

B1. Take temperatures, give blood tests, and administer hypodermics.

C1. Treat wounds, perform surgical operations, and help sick people get well.

A1. Do haircutting, hairdressing, manicuring, or shampooing.

The alternatives are rated: A = low, B = average, C = high level of interest.

Lee and Thorpe (1956_a) report a test - retest (one week interval) reliability coefficient of $+0.74$ based on a sample of ninety-three twelfth-grade male students.

The direct evidence on the validity of this instrument is not impressive. (1) As we have seen, it has a low correlation ($r = +0.13$) on the OL test. (2) Stefflre (1955) has shown that it is positively correlated with the prestige level of occupational choices; but the amount of correlation is evidently quite low. As with the OL scale, the indirect evidence presented in the next chapter suggests that it is among the poorer LOA instruments.

In summary, both instruments have the advantages characteristic of multiple-item structured response instruments, and the disadvantages which are characteristic of indirect, categorical, incomplete and unbalanced instruments. Because of their multiple-item construction, the total LOA score rests on several different estimates; they probably, therefore, are more reliable than they might be otherwise. Because of the structured responses, most persons have little difficulty giving answers which may be scored, and scoring is quite simply and rapidly done. On the other hand, the indirect and categorical basis of construction means that their relationship to LOA's continuum of difficulty is obscure. Also, because they are incomplete and unbalanced, there is no way of knowing whether they

are adequate measures of the various aspects of LOA. There is little empirical evidence available on them; what there is suggests that their validity is not very high, although their reliability appears to be quite high. They are easy to administer in group situations, are easy to score, and are readily available at a low market price.

Non-Commercial LOA Instruments. A number of LOA instruments have been designed for purposes of particular research projects. These fit into two of the types noted above. Most such instruments are direct, continuous, single-item, free-response, incomplete and unbalanced. There are quite a few of these in use; we shall not attempt to list all of them, but will present several for purposes of illustration. (It should be recognized that some writers seem to consider the stimulus question a trivial matter, for it is not always reported.) The following are among those which have appeared in the literature:

1. "What have you often thought you would like to do for a living?" (Lurie, 1939).
2. "If you had every opportunity to follow any career you wished but still had to work for a living, what occupation would you choose?" (Stubbins, 1950).
3. "If you could have any job you wanted, as an adult, what would you like to do?" (Barnett, et al., 1952).
4. Asked after each of several questions on educational plans:
"After you (quit high school, complete high school, graduate from college) what kind of work do you intend to do."
(Stephenson, 1957).
5. "In the above question you have indicated what you actually plan to do. However, often times we have to plan to do things we would not do if circumstances were different. Therefore the following question is asked: If you could do what you really wanted to do, what would you do?" (Stephenson, 1957).

The typing of these is based on the following observations: (1) Each question is designed to elicit an occupational title as its response; this is why each is classified as direct. (2) Although it is not evident in the stimulus questions, each technique is classified as continuous because the responses to each are assigned scores from a continuous scale, usually but not always of occupational prestige.¹ (3) Again, each is classed as single-item because only one stimulus question is used to elicit responses resulting in its LOA score; this is as true for Stephenson's two questions as it is for those of others because he uses each question to arrive at a different LOA score. (4) Since open-ended questions are used, the techniques are classed as free-response. (5) The techniques are clearly incomplete because none attempts to assess each expression level at various time-dimension periods. Lurie specifies neither a time-dimension period nor an expression level.

Stubbins specifies one expression level but no time-dimension period. Barnett, et al., specify one expression level and no distinct time-dimension period. Each of Stephenson's questions elicits a response at a different expression level, (4 and 5 above) and his first question (4 above) specifies a time-dimension period. But he uses each question as a different measure of LOA. Hence the first question elicits one expression level and one time-dimension period, and the other elicits one expression level and no time dimension period. (6) Inasmuch as a balanced technique requires equal representation of stimulus questions eliciting each expression level and each time-dimension period, it is clear that all of the above are unbalanced.

¹Many research workers have later collapsed the responses to these techniques into dichotomous or trichotomous classes for analysis. But the basic instrument is still classifiable as continuous.

The reliability and validity of these techniques are not reported, and are probably difficult to assess. Their users seem to have had at least a fair degree of success with them, however. All are difficult to assign scores, and the scoring probably has many errors, at least in some techniques. Finally, many respondents do not give answers in codable terms.

Another technique, applied with slight modifications by Sewell and Haller and by Haller in previously unpublished research to be described in the next chapter, makes use of a direct, continuous, multiple-item, free-response, incomplete and unbalanced design. A factor-analytic study of this technique is presented in Report V of this monograph, and a discussion of the exact forms of it which have been used in research is presented in Chapter IV, where it is called the "North-Hatt" technique. Briefly, it is based on NORC (1947) prestige ratings -- also called North-Hatt scores -- of responses to four stimulus questions.² These follow:

(1) "The occupations which I have thought about going into are:

- a. _____
- b. _____
- c. _____
- d. _____

(2) "The occupation that I plan to follow is: _____."

(3) "If I were absolutely free to go into any kind of work I wanted, my choice would be: _____."

(4) "The type of work I would like to be doing 10 years from now is:³ _____."

²See Table 1, p.71 for a listing of the NORC occupations and their rankings.

³One study used the words "when I am 30 years old" instead of "ten years from now."

The responses are treated in the following way: 1. The prestige score of the highest occupational choice mentioned in any question is used as an estimate of the idealistic expression level. 2. The prestige score of the lowest occupational choice mentioned in any question is used as an estimate of the realistic expression level. 3. The prestige score of the occupational plan, elicited in response to question (2), is used as an estimate of the realistic expression level. 4. The prestige score of the free occupational choice, elicited in response to question (3), is used as an estimate of the idealistic expression level. 5. The prestige score of the maturity choice, elicited in response to question (4), is used as an estimate of the long-range time-dimension period. A total LOA score may be based on any additive combination of these, such as an average or a factor-weighted score, since they are highly intercorrelated.

The technique is direct because all stimulus questions elicit occupational responses. It is continuous because the scores on the continuum of difficulty are based on an index measuring point along the entire range of the occupational hierarchy. It is multiple-item because several questions are used, and all contribute to the final LOA score. It is obviously free-response. It is clearly incomplete because, although it has questions at both expression-levels and at the long-range time-dimension period, it fails to specify the short-range time-dimension period. It is perhaps incomplete for another more subtle reason. This is that, unless specified in the stimulus question, the respondent must impute his own time-dimension period to an expression-level question, or his own expression-level to a time-dimension question. It is possible that the respondent may impute only one time-dimension period to all expression-level questions or may impute only one expression-level to the long-range time-dimension period. (This suggests that any one stimulus question should specify both its time-dimension period and

its expression-level, which is in fact done in the Occupational Aspiration Scale described in later chapters.) The technique is obviously unbalanced: only one of the five questions, and it is the last, elicits a long-range response, and no questions clearly elicit a short-range response.

Because of its high degree of internal consistency (See Report V) and its success in detecting relationships with non-LOA variables as well as its predictive validity over ^{several} / years (see Chapter IV), it must be concluded that, empirically, it is probably a good measure of LOA. Its reliability, however, is unknown. It has three important practical drawbacks. For one, many persons fail to answer the questions with responses which can be assigned scores deriving from the occupational hierarchy; in fact, the non-response rates in the two studies in which it was used are 17 and 25 per cent. For another, considerable guess-work is involved in assigning scores because the NORC study rates only 90/^{occupations} and there are, of course, many others. Finally, the technique consumes far too much of the time of highly trained--and costly--personnel to be of much use. While this is true of all free-response techniques, this difficulty is more pronounced in this particular one because there are more responses to code.

Conclusion

The commercial instruments, the OL scale and the LI scale, have many difficulties due to their departures from the LOA model. In addition, their validity is not known and is probably low, but as may be inferred from the next chapter, they are not wholly invalid.⁴ Their reliability is quite high, and they

⁴Chapter IV lists some hypotheses concerning the correlation of LOA to other variables. Since all the evidence regarding the validity of the hypotheses comes from instruments listed in this chapter, and since the evidence tends to confirm the hypotheses, it follows that the instruments cannot be wholly invalid.

are easy to administer and score. The bulk of the non-commercial instruments are strong in places where the commercial instruments are weak, and weak where the others are strong. Probably most of their difficulties are due to their departure from the LOA model. Both the validity and reliability of the single-item instruments are unknown, but--again on evidence which may be inferred from the next chapter--many of these are probably not wholly invalid. The best of the non-commercial instruments is multiple-item. It more nearly approaches the LOA model, it is internally consistent, factorially pure, and has predictive validity. Also, the indirect evidence presented in the next chapter supports the predictive data concerning its validity. But it has substantial practical drawbacks, especially in that many persons have difficulty responding adequately to it, and it is difficult to score.

It is to be expected that a more useful LOA instrument would be one which is designed to take advantage of all of the aspects of techniques which appear to be most effective in operationalizing the LOA model. It would probably be direct, continuous, multiple-item, structured response, complete, and balanced. This is in fact the design of the Occupational Aspiration Scale.

But before we present this instrument and the analyses of it, we shall present an analysis of LOA and its correlates. The subject of the next chapter, this analysis will state a set of hypotheses about the correlation of LOA to other variables, will briefly describe the sources of data to test the hypotheses, and will present the tests of hypotheses. The tests will utilize a number of different measures of LOA, but they will not be directly concerned with evaluating them, although some of the evidence is useful for this purpose. Rather the purpose of Chapter IV is to use available data to test the validity of the LOA concept. The weight of the evidence shows that it is a valid concept in that its measures behave more or less predictably. This, coupled with the inadequacies of the types of techniques reviewed in the present chapter, justifies the development and analysis of the Occupational Aspiration Scale.

CHAPTER IV

CORRELATES OF LEVEL OF OCCUPATIONAL ASPIRATION*

Previous chapters have introduced the reader to the concept of LOA and to methods presently available to measure it. The next pages present an attempt to test the validity or "lawfulness" of LOA.

For years a variety of techniques have been available to assess the validity of particular instruments. Methods for assessing the validity of the construct presumably measured by any one instrument, however, are only just beginning to emerge. These methods assume the existence of a fairly well developed theory, from which predictions can be deduced. Such predictions may be tested empirically. The total process of evaluating a construct by empirical tests of predictions concerning its behavior in relation to that of other variables has been called "construct validity" (Cronbach and Meehl, 1955). The special problem, included in construct validity, of assessing the correlation of instruments designed to measure the construct with variables logically related to it has been called the problem of "relational fertility" (McClelland, 1958).

In the present chapter, we will investigate the relational fertility of the LOA construct. A series of hypotheses will be formulated on the basis of considerations previously presented and from other social psychological knowledge. These hypotheses, encompassing a number of specific predictions, will be tested by reviewing the correlation of several measures of LOA with a wide variety of measures of other social psychological variables. The tests are based on both published and unpublished research, including about two

*Much of the data on which this chapter is based are taken from unpublished research of Professor William H. Sewell of the University of Wisconsin. The writers wish to express their thanks to him for permission to publish these data. Naturally, the interpretations of the data are the sole responsibility of the writers.

hundred correlates of LOA from about a dozen different studies. A preponderance of accurate predictions/^{testing each hypothesis} will be considered as evidence that LOA is as useful as its theory suggests. Erroneous predictions occur. Inspection of the nature of these suggests that they are due to a number of factors. Among the wrongly predicted positive correlations, some are due to the poorer LOA measures, some are due to poor measures of the "outside" variables, one or two may be due to inaccurate reports of the available research, some are doubtless due to the writers' mistakes in classifying particular "outside" variables as appropriate to hypotheses being tested, and some may be due to chance underestimation of the correlation. Most of the errors in predicting no relationship are probably due to the unavailability of theory (explicit or implicit) on which to base hypotheses or to the writers' lack of knowledge of such theory; and some may be due to chance overestimation of correlations.

In all cases the writers have sought to err on the side of over-cautiousness, if at all. There are many instances of variables clearly belonging, and many instances of variables clearly not belonging, to a particular hypothesis. But there are border-line cases. Such doubtful cases were included in the test of the hypothesis. There is one important exception. Some variables appeared appropriate to more than one hypothesis. When these were encountered they were included in the test of only one hypothesis, and this was the one to which they seemed most appropriate to the writers. As the reader will soon discover, with all its difficulties, this analysis supports the general hypothesis that LOA is a fruitful concept; it is our guess that our errors of judgment in the chapter tend to under-estimate the fruitfulness of the concept. But we do not wish to press this point too forcefully. The reader will judge for himself.

It is anticipated that a paper on the theory of attitudes and behavior, now being prepared, will be made available in the future. It is this unpublished paper which states the general case from which most of these hypotheses stem. (See A. O. Haller, "Some Principles of Attitudes and Behavior," unpublished working paper, 1960.)

Hypotheses

LOA was defined in previous chapters as^a special instance of level of aspiration and as a type of attitude. The predictions listed below are based on the assumption that LOA will behave as other instances of level of aspiration and as other attitudes do.¹ The predictions are of three types: presumed consequences of LOA (numbers 1 and 2, and possibly 7), presumed causes of LOA (numbers 3-6, and possibly 7), and no relationship (number 8):

(1) Object-behavior. All attitude measures are designed to predict, within limits, behavior toward the object to which they refer. This means that a valid attitude measure should be positively correlated with the behavior to which it relates. Naturally, particular circumstances may make the attitude difficult or impossible to carry into behavior. For this reason, perfect correlation is not to be expected.

Hypothesis (1). A high positive correlation will be found between LOA and subsequent level of occupational achievement.

(2) Means-behavior. Frequently, there are several steps which persons believe to be necessary before an attitude results in behavior toward its ultimate object. If these "stepping stones" are believed by a large proportion of the population to be means necessary to carrying the attitude into behavior, then the attitude should be positively correlated with behavior toward them. In modern society successful performance in the formal educational system is widely viewed as a means for high occupational achievement. The next hypothesis follows from this.

¹It is anticipated that a paper on the theory of attitudes and behavior, now being prepared, will be made available in the future. It is this unpublished paper which states the general case from which most of these hypotheses flow. (See A. O. Haller, "Some Principles of Attitudes and Behavior," unpublished working paper, 1960.)

Hypothesis (2). A positive correlation will be found between LOA and any measure of success in school.

(3) Group Success-Orientations. A great many sociological and anthropological studies, plus some experimental research (e.g. Sherif, 1935), document the proposition that the person tends to adopt attitudes inculcated by the groups to which he belongs. This should be as true of LOA as it is of any other attitudes. Moreover, a corollary to Prediction (2) is also relevant. Namely, if one behavior is commonly viewed as necessary to the execution of another, and if the group views the latter as important for a particular member, the group will attempt to inculcate the means-behavior attitude as well as the object-behavior attitude. Inasmuch as in urban-industrial societies high educational achievement is viewed as necessary for high levels of occupational achievement, the person should tend to have an LOA corresponding to the levels of educational aspiration his groups have for him. Both the LOA the group inculcates directly and the means-behavior attitude may be called "success orientations." Hypothesis (3) concerns these success-orientations of the person's groups.

Hypothesis (3). A positive correlation will be found between the person's LOA and the success orientations of the groups to which he belongs.

(4) Facilitation of the Social Situation. Experimental research on level of aspiration has shown that situations producing success or failure change the person's level of aspiration accordingly (Lewin, et al., 1944). Merton (1957) has argued that the success goal, which is largely occupational, is incorporated by most of the society. Other data appear to show that persons in situations which frustrate the desire to be a success are quite aware of it (Sewell and Haller, 1959). If the goal of high occupational achievement is learned by all or most

youth in the society, and if those in situations which frustrate the attempt to be successful are aware of the factors blocking their achievement, then they would be expected to lower their levels of occupational aspiration. Hypothesis (4) is based on this reasoning.

Hypothesis (4). A positive correlation will be found between LOA and the degree to which the social situation of the person tends to produce success in occupationally related areas of behavior.

(5) Facilitation of Personal Orientations. As noted, experimental research shows that success results in raising levels of aspiration and failure results in the reverse. There are a number of personal orientations (traits, values, and attitudes) which probably have the same effect. If a person's orientations are such that he frequently experiences success in areas believed to be related to occupational achievement, he would be expected to develop higher levels of occupational aspiration. Conversely, if his orientations are such that he frequently experiences failure in these areas, he would be expected to develop lower levels of occupational aspiration.

Hypothesis (5). A positive correlation will be found between LOA and any personal orientation tending to produce the experience of success in occupationally related areas of behavior.

(6) Willingness to Act Independently. Personal action always occurs in a context. Successfully carrying one goal into action may block the success of another. If two goals are incompatible, and if this is apparent to the actor, it would be expected that he will choose to pursue the goal that is most important to him. In the previous hypotheses it is held that LOA will be depressed by the experience of failure and elevated by the experience of success. Somewhat

similarly, the present line of reasoning argues that when the person perceives that success in an unimportant area would bring failure in an important area (or that failure in an unimportant area will bring success in an important area), he will lower his level of aspiration in the unimportant area. Concretely, high LOA's may not usually be realized without severing one's relation with the groups on which he is most dependent. Since this is probably evident to most participants in such situations, it is expected that the dependent persons--persons who would experience difficulty in severing relations with their groups--will have low LOA's and the independent persons will have high LOA's. This is the basis for Hypothesis (6).

Hypothesis (6). A positive correlation will be found between LOA and any personal orientation expressing the willingness to act independently.

(7) Self-Conceptions. Two different lines of reasoning both lead to the conclusion that LOA should be related to self-conceptions regarding success. (1952)
It has been argued by Foote that a self-conception results in organizing behavior so as to fulfill the self-conception. Success or achievement centers largely around the occupational sphere of life in the urban-industrial societies. For this reason, persons who view themselves as successful or as achievement-oriented, should tend to organize their self-concepts with respect to high occupational achievement. Inasmuch as this implies awareness of one's LOA, it should follow that LOA is positively correlated with conceiving of one's self as successful or as achievement-oriented. There is another rationale leading to the same conclusion. If one's behaviors are such as to produce success and therefore to produce a high LOA, the person should certainly tend to be aware of himself as successful or as achievement-oriented. This is equivalent to saying that success or achievement breeds a corresponding self-conception. Either or both of these lines of reasoning may be accurate. Both lead to the same hypothesis.

Hypothesis (7). A positive correlation will be found between LOA and self-conceptions concerning success or achievement-orientation.

(8) The Hypothesis of No Correlation. One of the key problems in relational fertility is the prediction of no correlation. If a construct is well understood, and if other variables which have been tested for correlation with it are equally well understood, it should be possible to specify which ones are correlated with construct. The obverse of this is that under such conditions it should be possible to specify which variables are not correlated with the construct. If a large number of variables are found to be unexpectedly correlated with the construct, it is clear that knowledge of the construct, the external variables, or both, is substantially limited. If, on the other hand, zero correlations are found where they are hypothesized, considerably more confidence in knowledge concerning the construct and the external variables is warranted.

Hypothesis (8). A correlation approaching zero will be found between LOA and all variables not specified under Predictions (1) through (7).

Types of Evidence

Data to test the hypotheses are taken from several studies. Super and several of his colleagues published resumes of three studies of Strong's Occupational Level scale in 1952 (Barnett, et al. 1952).

(1) The first of these, by G. J. Barnett, reports on a comparative study of physically able but chronically and nonchronically unemployed men in New York City. His data include the correlation of six other variables with Occupational Level scale scores. Correlation coefficients and TANH (Test Against the Null Hypothesis, Kish, 1959) data are presented for most pairs of variables. Barnett's

data seem to require cautious interpretation. His results are often so different from those of others that we are forced to suppose either that his samples are unique or that his computations are occasionally in error.

(2) The second study we draw upon is also reported in the same work. Handelsmann studied correlates of Occupational Level scores among juniors and seniors in two schools in a suburban community near New York City. He, too, presents correlation coefficients and TANH data for his samples. We shall refer to his samples as School A (N=64) and School B (N=68).

(3) The third study was done by Stewart. His data are also presented in the same work. He reports on the TANH (but not correlation coefficients) for Occupational Level scores against about 30 variables. Unfortunately, the data are reported in a form which is often not comprehensible to the present writers, and is therefore not as useful as it would be hoped. His sample consists of 136 juniors and seniors in a high school near New York City. All are sons of skilled workers.

(4) Another substantial source of data comes from Stubbins' (1950) study of the prestige of occupational choices of 219 apparently normal white World War II veterans who presented themselves at a guidance center in 1948. His LOA data consist of prestige codings (by experts) of answers to the question "If you had every opportunity to follow any career you wished but still had to work for a living, what occupation would you choose?" Correlation coefficients and TANH data are presented for each hypothesized relationship.

(5) In 1948, W. H. Sewell and Margaret Bright tested the 431 junior and senior boys in high school in a Wisconsin rural county near Milwaukee. Sewell and Haller traced these students in 1955 to learn about their occupational and

educational behavior during the intervening years.² Two different LOA measures were used. One was the Lee-Thorpe Level of Interest (LI) Test (1943) and the other was based on open-ended questions eliciting occupational choices. In the latter index, each respondent was asked to list all of the occupations he had considered entering, to specify the job he planned to enter (the final choice), the job he would enter if he were free to take any he wished (the free choice), and the job he would like to have ten years from then (the mature choice). The exact question-wordings are presented in Chapter III, p. 29. These were coded into actual or estimated (by a team of sociologists) North-Hatt (NORC 1947) occupational prestige scores in five ways: the highest, the lowest, the final, the free, and the mature level of choice. In addition, each boy was given the Lee-Thorpe Level of Interest sub-test measuring the occupational "level of interest." Five of these variables (the mature level was dropped because it was so highly correlated with the free level as to be redundant) were intercorrelated and factor-analyzed (Rao, 1955). The first orthogonal factor was indexed to yield a variable common to all five specific variables (Hagood and Price, 1952). This was considered to be a measure of LOA. Other variables were measured by means of objective tests or direct questions administered in a group situation, or were taken from school records. In all, this study assured the correlation of 57 different variables with each of the two LOA measures. Data from this study will be referred to as Jefferson County North-Hatt scores.

(6) Another study was conducted by Haller on 442 seventeen year old boys in school in a Michigan rural county near Detroit. This study will be

²The data of Sewell and his collaborators are unpublished. They are on file at the Department of Rural Sociology, University of Wisconsin, Madison.

described more fully in Chapter VI, because it is the main source of data on the OAS. Here again, two different LOA measures were used. The one we are concerned with in this chapter consists of the mean North-Hatt scores for all different occupational choices selected by the boys when asked essentially the same questions as were asked by Sewell and Bright to elicit the Jefferson County North-Hatt data. (See Report V of this monograph for exact question wording.) The other instrument used is the Occupational Aspiration Scale, which is the instrument to be evaluated in the later chapters of this monograph. Correlation coefficients and TANH data are available for each LOA measure (where possible) and each of some thirty-five other variables. Only the North-Hatt correlation will be presented in this chapter, however. (The OAS data will be presented in Chapter VII.) The data are based on objective tests and multiple-question indexes from questionnaires, again administered in groups, and from school records. We shall refer to this LOA measure as Lenawee County North-Hatt scores. (The North-Hatt scores for the occupation of farmer are unrealistically high. For this reason, those choosing to farm were dropped from all comparisons using North-Hatt scores.)

Other studies provide more limited types of data, usually one or two correlates of an LOA measure. Two such studies are from one of Sewell's projects.

(7) In 1957, Sewell, Haller and Straus published an article presenting the TANH of LOA (North-Hatt scores) with fathers' occupational prestige scores (also North-Hatt) and Henmon-Nelson³ mental maturity scores for one-sixth random sample of Wisconsin high school seniors. (Sewell, et al., 1957). This will be referred as Sewell, Haller, and Straus.

(8) Using other data from the above project, Haller and Sewell published a study including the TANH of Henmon-Nelson mental maturity scores and farm residence. (Haller and Sewell, 1957). No relationship was found between North-Hatt ratings of occupational choice and farm residence.

³In this chapter, published instruments will be given full citations only when they are mentioned in connection with previously unpublished data.

(9) Dynes and others made the TANH of North-Hatt scores of Cincinnati youth against the quality of interpersonal relations in the family, finding that higher LOA scores occur among youth from families with poor relationships. (Dynes, et al., 1956).

(10) Holloway and Berraman (1959) have shown that among Oregon junior high school boys, both race and lower social class status depress LOA, as measured by the Carson McGuire scale.

Tests of the Hypotheses

At the beginning of this chapter it was noted that the relational fertility of LOA might best be assessed by formulating hypotheses or predictions based on general knowledge about attitudes and level of aspiration. These were presented in the previous section. Basically, the predictions are of two kinds: the existence of a statistically significant correlation in a certain direction and the existence of no correlation. If the reasoning behind the hypotheses is substantially correct, if all the instruments are adequate -which is not wholly true - and if the research was properly executed -which is doubtful in some cases -then other than for sampling errors there should be no cases of unpredicted direction or "significance" of correlation. All positive predictions should be positive, and all zero predictions should approach zero, as indicated by the R.H.H. (We have cast all predictions of non-zero relationships in the positive form.) If this can be done with accuracy it may be concluded that LOA is a valid construct and that

a great deal is known about it.⁴ The standard .05 level of "statistical significance" is used in the TANH. Two-tailed tests are presented because the writers of most of the articles use it, and because we wish to err, if at all, on the side of over-cautiousness.

A few complications deserve mention. (1) Some studies, especially Stewart's, (Barnett, et al., 1952) include names of variables which the writers are unable to interpret. In such cases, the evidence is ignored. (2) At times, Barnett's (Barnett, et al., 1952) samples show negative correlations where other studies show positive correlations. These are too systematic to be due to chance or to poor measures. It appears that either his sample is quite unusual or some of his computations are in error. As a result his data must be used with care. (3) The non-LOA variables have been classified by the writers as appropriate or inappropriate to rest each prediction. We may well have made errors in classifying the non-LOA variables. (4) The writers have worked with some of these data for a long time so in some instances they may have had the benefit of knowing in advance the correlation of up to twenty or so of the variables with LOA. Naturally, we have tried to guard against such influence, but the possibility of its existence is always present. (5) Finally, the various measures of LOA are probably not equally good. A given measure of LOA may be poor because it does not clearly relate to the

⁴ Fortunately, in many of these tests there are either two or more different measures of LOA used on the same or different samples, or there are two or more similar measures of LOA used on different samples. Hence, for many of the correlations and TANH's there are comparative data to test the hypotheses. Thus quite strong evidence is available where comparative data exist and both are either in agreement or disagreement with the prediction to which they refer. Weaker, but useful, evidence is available when only one study has reported a test of an LOA measure against another variable. Equivocal evidence occurs when two comparable tests are contradictory. When this happens it is due either to unique characteristics of different measures of the same variable, either LOA or the other variable, or to the occurrence of a spuriously high or low correlation coefficient. We do not make use of this information, but the discerning reader will take note of it as it is presented.

occupational hierarchy or for a number of other reasons. (See Chapter III). Points (2) and (5) probably tend to bias against accepting the hypotheses, while the influence of points (1), (3) and (4) is unknown. For present tests, all interpretable data have been assumed to be equally good.

Hypothesis (1). A high positive correlation will be found between LOA and subsequent level of occupational achievement. In 1955, seven years after the initial testing, the Jefferson County sample members were traced and their actual occupations, among other things, were recorded. These were assigned actual or estimated North-Hatt ratings, and were correlated with the factor-weighted North-Hatt scores as well as the Lee-Thorpe scores, thus obtaining two estimates of the correlation of LOA to prestige level of occupational achievement. The correlation of level of occupational achievement with LOA as measured by the North-Hatt rating technique was found to be $+.46$, and as measured by the Lee-Thorpe technique it was found to be $+.17$.

Even the first of these is not especially high, and the last is quite low. On the basis of the first it would be concluded LOA tends to predict behavior toward its object. The second is almost negative evidence. Whether a period longer than seven years would have raised or lowered the correlation of LOA with the criterion is a moot question. If the original (1948) LOA had undergone substantial change as time passed, the correlation would drop. But if LOA is a stable variable which changes little over time, the correlation might become larger as the high aspirers find and exploit new opportunities to fulfill their LOA's.

But there is another way to decide whether the correlation of LOA with level of achievement is large. That is to compare this correlation with that of LOA and other variables. Some 50 other variables were tested against level of

occupational achievement in this study. They include intelligence, college plans, parental educational aspirations for the youth, parental socio-economic status, as well as others. No other 1948 variable is as highly correlated with levels of occupational achievement as is the North-Hatt LOA measure. Thus, it is concluded that at least one LOA measure supports the hypothesis. But the other is much less clear. The Lee-Thorpe correlation of $+.17$ is quite low. Moreover, a number of other 1948 variables are more highly correlated with prestige level of occupational achievement than is the Lee-Thorpe scale. On the basis of this latter evidence we must conclude either that the Lee-Thorpe instrument is not a good measure (a point supported by the discussion in Chapter III) or Hypothesis (1) concerning the object-behavior criterion is not wholly supported. In accord with the procedure specified above, however, these data are counted as one bit of evidence in favor of the hypothesis and one against.

Hypothesis (2). A positive correlation will be found between LOA and any measure of success in school. Several LOA measures have been tested against a variety of measures of success in school. The latter include (a) grade-points in high school (standardized to remove inter-school differences), (b) number of extra-curricular activities in high school, (c) amount of college training desired, and (d) number of years of school completed.

(a) Grade point averages in high school were correlated with North-Hatt scores in both the Lenawee County and the Jefferson County studies, as well as with Lee-Thorpe scores in the latter. Handelsmann also tested against Strong's Occupational Level Scale scores in both of the schools he studied. The respective correlation coefficients are Lenawee, North-Hatt: $+.53$; Jefferson, North-Hatt: $+.42$;

Jefferson, Lee-Thorpe: $+ .30$; Handelsmann, School A, Strong's Occupational Level Scale: $+ .42$; and Handelsmann, School B, Strong's Occupational Level Scale: $+ .30$. All five of these coefficients agree with the hypothesis.

(b) The number of extra-curricular activities in high school was correlated with Strong's Occupational Level Scale scores in studies by Handelsmann and Stewart, the occupational choice prestige scores of Stubbins, and with North-Hatt and Lee-Thorpe scores in the Jefferson County study. These correlations or TANH's are: Handelsmann, School A, Strong's Occupational Level Scale: $+ .26$; Handelsmann, School B, Strong's Occupational Level Score: not related; Stewart, Strong's Occupational Level Scale: $P < .05$, direction of relation positive; Stubbins, occupational choice prestige scores: $+ .16$; Jefferson County, North-Hatt: $+ .34$; and Jefferson County, Lee-Thorpe: $+ .19$. Of the six predictions in this test, five are correct and one is incorrect.

(c) Amount of college training desired has been tested against LOA in both the Lenawee County and the Jefferson County studies. The respective correlation coefficients are Lenawee County, North-Hatt: $+ .67$; Jefferson County, North-Hatt: $+ .38$; and Jefferson County, Lee-Thorpe: $+ .27$. Thus there are three tests of the prediction, all of which support it.

(d) The number of years of school completed has been measured in several ways in different studies. In the Jefferson County study, it refers to the number of years of college completed. For Barnett's samples of unemployed men it covers all possible levels from primary school through the Ph.D. degree. In Stubbins' study it appears to cover a range from high school drop-outs to persons with college training. (This is not known; it is inferred from the mean of 11.6 years of school he presents.) The findings are Jefferson County, North-Hatt: $+ .52$; Jefferson County, Lee-Thorpe: $+ .38$; Barnett, chronically unemployed, Strong's Occupational

Level Scale: $+.19$; Barnett, nonchronically unemployed, Strong's Occupational Level Scale: $-.19$; and Stubbins, occupational choice prestige scores: $+.34$. Regarding this test of Hypothesis (2) we find four agreements and one apparent contradiction. The contradiction is in Barnett's nonchronically unemployed sample. As was indicated in the introduction to this section, this sample's behavior is in sharp contrast to that of other samples on many of the variables with which we are concerned. For this reason it is difficult to know whether it should really be accepted as negative evidence. For purposes of this test, of course, it is accepted as such.

A total of 19 specific predictions were made to test Hypothesis (2). There were 17 confirmations, one clear contradiction, and one apparent contradiction. (Both of the latter used Strong's Occupational Level Scale as the LOA measure and one of the latter comes from Barnett's deviant non-chronologically employed sample.) The evidence thus provides substantial support for Hypothesis (2).

Hypothesis (3): A positive correlation will be found between the person's LOA and the success orientations of the groups to which he belongs. Again, several LOA measures have been tested against the success orientations of the person's groups. Unfortunately, the only group on which data are available is the family. These include (a) sons' estimates of their parents' levels of occupational aspiration for them and the sons' LOA scores; and (b) sons' estimates of parents' levels of educational aspiration for the sons and sons' LOA scores.

(a) Sons' estimates of their parents' levels of occupational aspiration for them were correlated with the sons' North-Hatt scores in the Lenawee County study. The respective correlation coefficient is $+.29$. The one coefficient available then, agrees with the hypothesis.

(b) Sons' estimates of parents' levels of educational aspiration for them are available from both the Jefferson County and Lenawee County studies. These correlation coefficients are Jefferson County, sons' North-Hatt LOA scores by sons' estimates of their fathers' levels of educational aspiration for them: $+0.37$; Jefferson County, sons' Lee-Thorpe scores by sons' estimates of their fathers' levels of educational aspiration for them: $+0.31$; Jefferson County, sons' North-Hatt LOA scores by sons' estimates of their mothers' levels of educational aspiration for them: $+0.36$; Jefferson County, sons' Lee-Thorpe LOA scores by sons' estimates of their mothers' levels of educational aspiration for them: $+0.32$; Lenawee County, sons' North-Hatt LOA scores by sons' estimates of their parents' levels of educational aspiration for them: $+0.44$. Again, all of these correlation coefficients agree with the hypothesis.

A total of six specific correlation coefficients are available to test Hypothesis (3). Since all are in agreement with it, it may be concluded that the hypothesis is confirmed.

Hypothesis (4). A positive correlation will be found between LOA and the degree to which the social situation of the person tends to produce success in occupationally related areas of behavior.

(a) Social class status measures are one set of social situational variables which may influence LOA by providing differential frustration of the person's attempts to achieve the success goal characteristic of urban-industrial society. This may be due to two different elements. The most obvious is that lower class youth lack the financial means to utilize the channels of achievement available in such societies. The less obvious is that the lower class youth may lack the more subtle behavior patterns ("manners") viewed by those of other classes as

necessary for high achievement, and consequently he may have his efforts at achievement rebuffed. The various social class status and LOA measures, and the studies in which they were used are as follows. Father's occupational prestige status: Jefferson County, North-Hatt ratings and Lee-Thorpe scores; Lenawee County, North-Hatt ratings; and Stubbins' experts' ratings of the prestige of subjects' choices; Sewell, Haller and Straus (1957), North-Hatt ratings. Intelligence level of fathers' occupation (Barr Scale scores): Barnett's study. Sewell Socio-economic Status Scale (Sewell, 1943) scores, slightly modified: Jefferson County, North-Hatt ratings and Lee-Thorpe scores; Lenawee County, North-Hatt ratings. Fathers' and mothers' educational status/^(number of years of formal education): Jefferson County, North-Hatt ratings and Lee-Thorpe scores; Lenawee County, North-Hatt ratings. Education of siblings: Stubbins' experts' ratings of the prestige of the subjects' choices. The degree of importance of the family in the community (youths' estimate): Jefferson County, North-Hatt ratings and Lee-Thorpe scores. Youth's estimate of his parents' ability to provide him with financial assistance: Jefferson County, North-Hatt ratings and Lee-Thorpe scores. Youths' estimate of the conveniences, comfort and appearance of his home as compared to others: Jefferson County, North-Hatt ratings and Lee-Thorpe scores. Youths' estimate of the importance of his family in the community: Jefferson County, North-Hatt ratings and Lee-Thorpe scores. Youths' estimate of the income of his family compared to others in the community: Jefferson County, North-Hatt ratings and Lee-Thorpe scores. Educational level of the subjects' relatives: Stewart, Strong's Occupational Level Scale scores.

(b) Members of minority groups of ten face discrimination over jobs. To the individual, this probably appears to be a rebuff to his attempts to achieve. Both personal experiences of this sort and experiences others communicate to the person would be expected to depress levels of occupational aspiration. One set of data are

hypothesis.
available to test this. /These are from the Holloway and Berroman study of Oregon youth using Carson McGuire's rating device as the LOA measure and White-Negro racial differences as the social situational variable.

(c) The youth's parents' willingness to contribute financial support toward helping him to get a start should present another social situational variable resulting in differential frustration of the youth's high achievement orientations. The correlation of both North-Hatt ratings and Lee-Thorpe scores with the youth's perception of this variable are available from the Jefferson County study.

(d) Post-educational work experience. For those who have been out of school for a period, the experience of having been situated at various levels of occupational hierarchies and of competing for higher jobs provides a set of social situational influences which should raise or lower the LOA scores of a person depending upon whether or not he was successful. Five correlation coefficients are available to test this aspect of the hypothesis. Three of these come from Stubbins' study in which LOA is measured by experts' judgments as to the prestige of the person's occupational choice. They are the prestige level of the person's usual occupation, his rank while in military service, and his employment (versus unemployment) status. The other two, both using amount of employment as the work experience measure (versus unemployment), are from Barnett's studies of the Strong's Occupational Level Scale scores of chronically and non-chronically unemployed men.

The respective correlation coefficients or TANH's follow . In all cases a positive correlation indicates that high LOA is associated with the social situation which is least frustrating. (a) Social class status. Father's occupational prestige status - Jefferson County, North-Hatt: +.20; Jefferson County, Lee-Thorpe, +.12; Stubbins' experts' occupational prestige ratings: +.14; Lenawee County, North-Hatt: +.29; Sewell, Haller, and Straus, North-Hatt ratings: $P < .001$,

direction of relation positive. Intelligence level of father's occupation - Barnett: Barr Scale scores of chronically unemployed: not significant; Barnett: nonchronically unemployed: Barr Scale scores: $-.24$. Sewell Socio-economic Status scores - Jefferson County, North-Hatt: $+.21$; Jefferson County, Lee-Thorpe: $+.24$; Lenawee County, North-Hatt: $+.38$. Fathers' education status - Jefferson County, North-Hatt: $+.26$; Jefferson County, Lee-Thorpe: $+.27$; Lenawee County, North-Hatt: $+.27$. Mothers' educational status - Jefferson County, North-Hatt: $+.21$; Jefferson County, Lee-Thorpe: $+.25$; Lenawee County, North-Hatt: $+.25$. Educational status of relatives - Stewart, Strong's Occupational Level Scale scores: not related. Education of siblings - Stubbins' experts' ratings of the prestige level of the choice: $+.15$. The importance of the youths' parents in the community (youths' estimate) - Jefferson County, North-Hatt: $+.11$; and Jefferson County, Lee-Thorpe: not related. Parents' ability to provide financial assistance to the youth (Youths' perception) - Jefferson County, North-Hatt: $+.11$; Jefferson County, Lee-Thorpe: $+.11$. Youths' estimate of the comparative quality of the conveniences, comfort and appearance of his home - Jefferson County, North-Hatt: not related; Jefferson County, Lee-Thorpe: not related. Youths' estimate of his family's income compared to others in the community - North-Hatt: not related; Lee-Thorpe: not related.

In sum, 26 tests of the aspect of Hypothesis (4) referring to the social class status situation of the person have been presented. All but eight of these were in agreement with the hypothesis. Two of the negative cases are from Barnett's study of Strong's Occupational Level Scale scores of chronically and nonchronically unemployed men, and one is from Stewart's study of Strong's Occupational Level Scale scores of working class boys. Two more are from the Jefferson County study, and both concern the youths' perception of the convenience, comfort and

appearance of his home as compared to that of others. The North-Hatt ratings and Lee-Thorpe scores each fail to be related to this variable. The sixth negative case concerns the youths' perception of the importance of his parents in the community and the Lee-Thorpe scores. The last two (also from the Jefferson County study) concern both North-Hatt and Lee-Thorpe scores in relation to the youths' perception of his family's income.

(b) Race - Holloway and Berriman, Carson McGuire occupational ratings: $P < .05$. Thus, regarding race there is one test of the hypothesis and that agrees with it.

(c) Parents' willingness to provide financial assistance to the youth (youths' perception) - Jefferson County, North-Hatt ratings: not related; Jefferson County, Lee-Thorpe: not related. In this set, data for two tests of the hypothesis are available, and both are contrary to it.

(d) Post-educational work experiences. Prestige level of usual occupation - Stubbins, experts' ratings of the prestige of the person's occupational choice: $+.13$. Rank in service - Stubbins, experts' ratings of the prestige of the persons' occupational choice: $+.19$. Employment (versus unemployment) status - Stubbins, experts' ratings of the prestige of the person's occupational choice: $+.14$. Amount of employment (versus unemployment) - Barnett's chronically unemployed sample, Strong's Occupational Level Scale scores: not related; Barnett's non-chronically unemployed sample, Strong's Occupational Level Scale scores: $+.39$.

Thus, there are five tests of the aspect of Hypothesis (4) referring to success in post-educational work experience. Four of these support the prediction and one does not. The latter concerns the amount of employment and Strong's Occupational Level Scale scores of Barnett's chronically unemployed sample.

Summarizing, Hypothesis (4) holds that social situational factors frustrating efforts to achieve the success goal should result in lowered LOA scores. Data are available for the consequences for LOA of four different types of social situational variables, social class status, race, parents' willingness to contribute financial support to help the youth, and post-educational work experience. Twenty-six tests are available concerning the first of these; 18 are in agreement with the hypothesis and eight are contrary to it. Of the latter, three use the Strong's Occupational Level Scale (the Strong's Occupational Level Scale is not used in any of the confirmations), and two of the three are from Barnett's deviant studies. The others use North-Hatt and Lee-Thorpe LOA scales, but depend upon indirect measures of social class status - the youths' perception of some aspect of his family's status as compared to others. Only one test is available concerning race, the second of the social situational variables. It is in agreement with the hypothesis. Two tests are available concerning the third social situational variable, the youths' parents' willingness to provide financial assistance to him. Both of these are contrary to the hypothesis. Both depend upon an indirect measure, the youth's perception of his parents' willingness to provide financial assistance to him. Five tests are available regarding post-educational work experience and four of these support the hypothesis. Again, the negative instance concerns Strong's Occupational Level Scale scores of one of Barnett's studies. In general, it appears warranted to conclude that, with 23 confirmations out of 34 specific tests, the hypothesis is supported by the evidence. Moreover, all 11 instances classified as negative evidence are of somewhat doubtful validity.

Hypothesis (5). A positive correlation will be found between LOA and any personality orientation tending to produce the experience of success in occupationally related areas of behavior. Data to test this hypothesis are from a variety of variables and sources. Many studies have correlated an intelligence test with one measure or another of LOA, including almost every available measure of the latter variable. Except for these, practically all of the LOA measures are either from the Jefferson County study or the Lenawee County study. The only other exceptions to this are Handelsmann's two applications of Strong's Occupational Level Scale. Including intelligence, correlates are available for several personality orientation variables which, in the judgment of the writers, fulfill the requirements of the hypothesis. These have been grouped into five categories, as follows.

(a) Intelligence: clearly, those who are of higher intelligence, either by nature or nurture, will tend to be successful in their behaviors related to occupational achievement, and these in turn should tend to have higher LOA scores. Standard mental maturity or intelligence tests have been used in all the studies presented.

(b) Orientations facilitating intelligent action: some personality orientations appear to restrict the range of behaviors the person can carry out. They should, therefore, limit the success of the person in any activity requiring sustained effort. For this reason the person having such an orientation should tend to be unsuccessful in a disproportionate number of his actions. Orientations of this type are called by a number of names, such as nervousness, personality maladjustment, neuroticism, etc. Their polar opposites may be considered as facilitating intelligent action. Present data include several indexes judged to be measures of some of these variables. They include the total adjustment score

of the California Test of Personality, and Factors C, F, O, and Q_1 of Cattell's 16 P-F Test (Institute for Personality and Adjustment Testing, 1950). The latter are called, respectively, emotional stability vs. dissatisfied emotionality, surgency vs. desurgency, anxious insecurity vs. placid self-confidence, and nervous tension.

(c) Socially facilitating character orientations: certain of the "character traits" tend to produce behavior resulting in relatively consistent rewards or punishments for the person possessing them, quite apart from the competence of his technical or intelligence-directed performance. It seems reasonable to assume that, in interaction with teachers and others who mete out evaluations of the young person's occupationally related behaviors, the youth is rebuffed if he has "inappropriate" ways of relating himself to others. The converse should happen when the youth with socially approved behavior orientations interacts with others. The person should experience success or failure to the extent that he consistently presents himself to teachers and others in accord with these orientations. For this reason, LOA should vary with socially facilitating character orientations. These variables include the 16 P-F Test Factors A, G, N and Q_3 (Institute for Personality and Adjustment Testing, 1950). In order, these are called cyclothymia vs. schizothymia, character or super-ego strength vs. lack of internal standards, sophistication vs. rough simplicity, and will control or character stability vs. lack of will control.

(d) Achievement orientation: all other things being equal, it stands to reason that those whose orientations channel their energies into action facilitating occupational and educational achievement should experience success more frequently than others do. LOA has been correlated twice with a variable measuring

achievement orientations, namely a teacher's rating of the youth's general level of aspiration, presumably a measure of achievement drive. These data are taken from Handelsmann's studies.

The correlation coefficients or TANH's testing the hypotheses are these:

(a) Intelligence. Henmon-Nelson Mental Maturity Test raw scores - Sewell, Haller and Straus, North-Hatt: $P < .001$, direction of relation positive; Jefferson County, North-Hatt: $+.25$; Jefferson County, Lee-Thorpe: $+.24$. Cattell's Test of G-Culture Free (Cattell and Cattell, 1950) - Lenawee County, North-Hatt: $+.46$. Otis scores - Barnett, chronically unemployed men, Strong's Occupational Level Scale: $+.28$; Barnett, nonchronically unemployed men, Strong's Occupational Level Scale: $-.24$; Handelsmann, School A, Strong's Occupational Level Scale: $+.42$; Handelsmann, School B, Strong's Occupational Level Scale: not related ($r = +.20$). Stewart, unspecified intelligence scores, Strong's Occupational Level Scale: $P < .05$, direction of relation positive. The Wonderlich Personnel Test scores - Stubbins, exports' ratings of the prestige of the occupational choice: $r = +.43$. In sum, ten tests of the correlation of LOA measures to intelligence scores have been presented. In eight of these, the hypothesis has been found to be accurate. In one (Handelsmann's School B) it is problematical and in one (Barnett's nonchronically unemployed sample) is apparently wrong. The clearest negative case comes from Barnett's study. As has been seen, this study is the source of much apparent negative evidence. Also, both it and the problematical negative case depend upon Strong's Occupational Level Scale scores to measure LOA.

(b) Orientations facilitating intelligent action. These correlation coefficients on these measures are the following: California Test of Personality total adjustment scores - Jefferson County, North-Hatt: $+.16$; Jefferson

County, Lee-Thorpe: $+.24$; Lenawee County, North-Hatt: $+.30$. Cattell's 16 P-F Test, all data from Lenawee County, 16 P-F Test Factor C, emotional stability - North-Hatt: $+.19$. 16 P-F Test Factor F, surgency - North-Hatt: not related. 16 P-F Test Factor O, lack of anxious insecurity - North-Hatt: not related. 16 P-F Test Factor Q_4 , lack of nervous tension - North-Hatt: not related. There are seven tests of this aspect of the hypothesis. In four of these the hypothesis appears to be supported; in three it receives no support. All of the non-supportive instances involve the North-Hatt scale. Only one other instrument, the Lee-Thorpe Scale, was used for these tests, and it was only used once. While the weight of evidence tends to support this aspect of the hypothesis, the fact that nearly one-half of the tests are negative strongly suggests that it is either inaccurate or needs to be modified. (In any case, the negative cases are used as negative evidence in testing the construct validity of LOA.)

(c) Socially facilitating character orientations. The data on measurements testing this aspect are all taken from the Lenawee County study. 16 P-F Test Factor A, cyclothymia vs. schizothymia - North-Hatt: not related. 16 P-F Test Factor G, super-ego strength - North-Hatt: $+.23$. 16 P-F Test Factor N, sophistication - North-Hatt: $+.21$; 16 P-F Test Factor Q_3 , will control and character stability - North-Hatt: $+.13$. This aspect of the hypothesis is tested by four correlation coefficients. Three are as hypothesized and one is contrary. (The one contrary case is based on North-Hatt data, the only scale used for this series of tests.)

(d) Achievement orientation. These tests of the prediction are as follows. Teacher's rating of youth's general level of aspiration - Handelsmann's School A, Strong's Occupational Level Scale: $+.25$; Handelsmann's School B, Strong's Occupational Level Scale: $+.24$. Thus, there are two tests and two confirmations.

In sum, there are four sets of data testing the hypothesis that a positive correlation will be found between LOA and any personality orientation tending to produce the experience of success in occupationally related areas of behavior. These four are intelligence, orientations facilitating intelligent action, socially facilitating character orientations, and achievement orientations. The data regarding the first orientation show ten tests, eight confirmations and two rejections. Data regarding the second orientation show seven tests, four confirmations and three rejections. Data regarding the third orientation show four tests, three confirmations and one rejection. Finally, data regarding the fourth orientation show two tests, both of which are confirmations. Over all, there were 23 tests, 17 of which are in agreement with the prediction and six of which are in disagreement with it. Special instances of negative cases appear at two points. For one, nearly one-half of the tests regarding the factors interpreted as orientations facilitating intelligent action were negative. For a second, Barnett's nonchronically unemployed sample again appears to be a negative case. The Strong's Occupational Level Scale and the North-Hatt ratings both appear among the negative cases. Over all, it may be concluded that personal orientations tending to produce the experience of success are in fact positively correlated with LOA. But the sizeable number of rejections among variables expected by the writers to facilitate or inhibit the use of intelligence suggests that knowledge of this sub-area may be limited.

Hypothesis (6). A positive correlation will be found between LOA and measures of any personality orientation expressing the willingness to act independently. All data testing this hypothesis come from the Lenawee County study. Altogether there are four different measures of "willingness to act independently." These are Cattell's Factors E, H, Q₁ and Q₂ from the 16 P-F Test.

(Institute of Personality and Adjustment Testing 1950). They are called "dominance or ascendance vs. submission," "adventurous autonomic resilience or adventurousness vs. inherent, withdrawn schizothymia or timidity," "radicalism vs. conservatism," and "independent self-sufficiency vs. lack of resolution."

The correlation coefficients testing this hypothesis follow. 16 P-F Test Factor E, dominance - North-Hatt: $+.11$; 16 P-F Test Factor H, adventurousness - North-Hatt: $+.22$; 16 P-F Test Q_1 , radicalism - North-Hatt: $+.13$; 16 P-F Test Factor Q_2 , independent self-sufficiency - North-Hatt: $+.14$.

Summarizing, four correlation coefficients are available to test the hypothesis that LOA is positively correlated with willingness to act independently. In all of these, the data support the hypothesis.

Hypothesis (7). A positive correlation will be found between LOA and self-conceptions concerning success or achievement orientation. The available items testing this hypothesis come from several studies. Two pairs of tests, one concerning leadership self-conception in school activities and the other concerning the youths' estimate of his chances to get ahead, come from the Jefferson County, Wisconsin study. Another pair of tests come from Barnett's study of chronically and nonchronically unemployed New York men. Still another pair of tests come from Handelsmann's study of working class boys in two New York area schools.

The leadership self-concept variable is a crude three-point scale, in which the youth is assigned a score of zero if he reports that his number of leadership activities is less than average, one if average, and two if more than average. The youth's estimate of his comparative chances to get ahead is also gauged by a crude scale, this having five possible points ranging from zero for "very much below average" to four for "very much above average." Barnett's study uses a

multiple-item index of satisfaction or dissatisfaction with vagrancy as a way of life. Handelsmann uses a self-rating of general level of aspiration.

These are the respective correlation coefficients: Leadership self-conception (school activities) - Jefferson County, North-Hatt: $+.33$; Jefferson County, Lee-Thorpe: $+.23$. Youth's estimate of his chances to get ahead - Jefferson County, North-Hatt: $+.13$; Jefferson County, Lee-Thorpe: $+.10$. Dissatisfaction with vagrancy as a way of life - Barnett's chronically unemployed men, Strong's Occupational Level Scale scores: $+.73$; Barnett, nonchronically unemployed men, Strong's Occupational Level Scale scores: $+.68$. Self-rating of general level of aspiration - Handelsmann, School A, Strong's Occupational Level Scale scores: $+.44$; Handelsmann, School B, Strong's Occupational Level Scale scores: not related.

Summarizing, eight tests are available for this hypothesis. Seven are in agreement with the prediction and one is not. The latter comes from Handelsmann's study of self-ratings of general levels of aspiration and Strong's Occupational Level Scale scores of high school boys. Overall, the prediction appears tenable.

Prediction (8). A correlation approaching zero will be found between LOA and all variables not specified under Hypothesis (1) through (7). When a construct is well understood it is possible to predict which other variables will be correlated with it. This is the objective of the previous tests. Such a statement, however, implies something else. That is, it implies that when a construct is well understood, it is possible to predict which variables are not correlated with it. This is the objective of the present hypothesis.

Data testing the hypothesis come from practically all of the studies used in testing the previous hypotheses. With some exceptions, all correlation coefficients or TANH's not reported in testing previous hypotheses will be presented to test the present hypothesis. The exceptions concern variables having

operational or conceptual definitions too obscure to comprehend. For example, a report may state that "religion of family" is correlated (or uncorrelated) with a certain LOA measure. If the report fails to tell what "religion of family" means--Protestant vs. Catholic, religious vs. atheist, member of a prestige denomination vs. member of non-prestige denomination, etc.--it is impossible to decide whether the variable bears a logical relationship to LOA. Variables dropped for this reason included two used by Stubbins (counselors' estimate of the subjects' personality, and the difference between the levels of the occupations possessed and desired by the subject), three used by Handelsmann (each called a measure of level of aspiration), and all of Stewart's variables not reported above.

The .05 "significance" level will be taken as the criterion for correlation approaching zero. If $P > .05$ then we shall consider that the evidence favors the hypothesis; if $P < .05$ then we shall consider that the evidence is contrary to the hypothesis. Negative correlations of $P < .05$ are of course also counted as evidence against the hypothesis.

Inasmuch as no logical ordering of the tests can be referred from theory, the data testing the hypothesis are grouped only by the study from which they are taken. (There is one exception: when two or more studies use the same non-LOA variable, all the data regarding that variable are presented at the same point in the text.) The first set are from the Jefferson County study. Father's non-farm vs. farm occupation - North-Hatt ratings: not related; Lee-Thorpe scores: +.12. Father's approval of the youth's final occupational choice, North-Hatt: +.11; Lee-Thorpe: not related. Mother's approval of the youth's final occupational choice - North-Hatt: +.10; Lee-Thorpe: not related. Father's encouragement of the youth to follow his occupation - North-Hatt: not related; Lee-Thorpe: not related. Youth's rating of the importance of "opportunity for

employment" - North-Hatt: not related; Lee-Thorpe: not related. Youth's rating of the importance of "the social standing of the job in the community" - North-Hatt: not related; Lee-Thorpe: not related. Youth's rating of the importance of "working hours" - North-Hatt: $-.28$; Lee-Thorpe: $-.18$. Youth's rating of the importance of "the kind of people you meet" -- North-Hatt: not related; Lee-Thorpe: not related. Youth's rating of the importance of "the good you can do" - North-Hatt: $+.24$; Lee-Thorpe: not related. Youth's rating of the "opportunity for advancement" - North-Hatt: not related; Lee-Thorpe: $+.11$. Youth's rating of "the chance to be one's own boss" - North-Hatt: not related; Lee-Thorpe: not related. Youth's rating of "the financial reward" - North-Hatt: $-.17$; Lee-Thorpe: not related. Youth's rating of "the education it takes" - North-Hatt: $+.11$; Lee-Thorpe: not related. Youth's perception of his father's satisfaction with his (the father's) job - North-Hatt: not related; Lee-Thorpe: not related. Youth's perception of his mother's satisfaction with the father's job - North-Hatt: not related; Lee-Thorpe: not related. Youth's perception of his general agreement (versus disagreement) with his father - North-Hatt: not related; Lee-Thorpe: not related. Youth's perception of his general agreement (versus disagreement) with his mother - North-Hatt: not related; Lee-Thorpe: not related. The number of occupations seriously considered by the youth - North-Hatt: $+.22$; Lee-Thorpe: $+.16$. Amount of thought the youth reports having given to choosing an occupation - North-Hatt: $+.22$; Lee-Thorpe: $+.18$. Youth's estimate of the amount of knowledge he has about his specific occupational choice - North-Hatt: $-.20$; Lee-Thorpe: $-.20$. Youth work (versus no work) experience while in school - North-Hatt: $-.12$; Lee-Thorpe: not related. Youth's estimate of his ability for the occupation he plans to enter - North-Hatt: $+.11$; Lee-Thorpe: not related. Youth's belief that his occupational plan was influenced strongly by his father - North-Hatt: not related;

Lee-Thorpe: not related. Youth's belief that his occupational choice was influenced strongly by his mother - North-Hatt: not related; Lee-Thorpe: not related. Youth's belief that his occupational choice was influenced strongly by his siblings - North-Hatt: -.12; Lee-Thorpe: not related. Youth's belief that his occupational choice was influenced strongly by other relatives - North-Hatt: not related; Lee-Thorpe: not related. Youth's belief that his occupational choice was influenced strongly by his teachers - North-Hatt: +.23; Lee-Thorpe: not related. Youth's belief that his occupational choice was influenced strongly by his peers - North-Hatt: not related; Lee-Thorpe: not related. Youth's belief that his occupational choice was strongly influenced by himself - North-Hatt: not related; Lee-Thorpe: not related. Youth's satisfaction with his father's education - North-Hatt: +.14; Lee-Thorpe: +.15. Youth's perception of his father's satisfaction with his (the father's) education - North-Hatt: +.11; Lee-Thorpe: not related. Mother's work (versus no work) outside the home - North-Hatt: not related; Lee-Thorpe: not related. Size of youth's home community - North-Hatt: not related; Lee-Thorpe: +.11. Parent's marital status (broken home versus non-broken home) - North-Hatt: not related; Lee-Thorpe: not related. Years of military service (between high school, 1948, and restudy, 1955) - North-Hatt: not related; Lee-Thorpe: not related.

The second set of data testing the final hypothesis come from the Lenawee County study. Cattell's 16 P-F Test, Factor I, emotional sensitivity versus tough maturity - North-Hatt rating: not related. Cattell's 16 P-F Test, Factor L, paranoid schizothymia versus trustful altruism - North-Hatt: not related. Cattell's 16 P-F Test, Factor H, hysteric unconcern ("bohemianism") versus practical concernedness - North-Hatt: not related. Multiple-item index of the youth's concern over the social class status of his family⁵ - North-Hatt: not related.

⁵An index similar to a factor reported in previous literature. See Sewell and Haller (1959).

A third set of data testing the last hypothesis are from Stubbins' study of veterans applying for counseling service. Veteran's marital status - experts' ratings of the prestige of the person's occupational choice: not related. Number of veteran's dependents - experts' ratings: not related. Veteran's number of dependents - experts' ratings: not related. Number of years of employment - experts' ratings: not related. The difference between the education of the veteran and his siblings - experts' ratings: $+.20$.

Miscellaneous data come from various sources. These include the studies of Barnett, Handelsmann, Stubbins, and Stewart, as well as some not previously mentioned, including that of Dynes et al. (1956) and Haller and Sewell (1957). Age - Jefferson County, North-Hatt: not related; Jefferson County, Lee-Thorpe: not related; Barnett, chronically unemployed, Strong's Occupational Level Scale scores: not related; Barnett, nonchronically unemployed, Strong's Occupational Level Scale scores: $-.30$ (presumably, $P < .05$, but this is not reported by Barnett); Handelsmann, School A, Strong's Occupational Level Scale: not related; Handelsmann, School B, Strong's Occupational Level Scale: not related. Stubbins, experts' ratings of the prestige of the occupational choice: not related. Farm (versus non-farm) residence - Haller and Sewell (state-wide sample of high school seniors in Wisconsin), North-Hatt ratings: not related. Poor relationships among family members, Dynes, et al., North-Hatt ratings: $P < .05$.

Summarizing, Hypothesis (8) holds that a low correlation approaching zero will be found between LOA and any variable not included in Hypothesis (1) through (7). Hence, accepting the TANH is a confirmation of the hypothesis and rejecting the TANH is a disconfirmation. Over all, 88 tests have been presented. Of these, 62 tend to confirm the hypothesis, while 26 are contrary to it. The evidence clearly is weighted toward accepting the hypothesis, but the 26 exceptions cannot be dis-

counted. Evidently, present knowledge of LOA and its correlates is incomplete; chance over-estimation of the amount of correlation probably could not account for so many disconfirmations. It appears likely that LOA varies systematically with factors not anticipated in the hypotheses.

SUMMARY

It has been held that the validity of a construct may be tested by successfully predicting its relationships to other variables. To perform such a test of the validity of the LOA construct, eight hypotheses were stated concerning the existence (or degree) of correlation of any particular measure of LOA with other variables. In all cases the $P \leq .05$ level is used as critical in the TANH.

The first seven of these predicted that a correlation exists, and the last (the logical opposite) predicted that no correlation exists. In the first seven, a total of 96 specific tests are available. In 75 of these, the predictions of positive correlation (or stability regarding the TANH) is confirmed. In 21 it is disconfirmed. A total of 88 coefficients are available to test Hypothesis (8), which holds that no correlation exists between LOA and variables not belonging to Predictions (1) through (7). In 62 of these the prediction of no correlation is confirmed. In 26 it is disconfirmed.

In short, when a positive correlation is hypothesized there is an accuracy of about 78 per cent. Conversely, when no correlation is hypothesized there is an accuracy of about 70 per cent. While this is far from the efficiency that might be hoped for, it nonetheless demonstrates that LOA is a construct having lawful and known relations to other variables. This is a clear, though imperfect, demonstration of the construct validity of LOA.

Some LOA instruments are doubtless poorer than others. This means that they show less correlation with a criterion and it may be that some of the disconfirmations of Hypotheses (1) through (7) are due to this fact. Specifically, a disproportionate number of apparent disconfirmations appear to come from studies using Strong's Occupational Level Scale. This suggests that the use of better LOA measures would have improved LOA's performance in the first seven hypotheses. But the excessively low correlation of non-LOA variables ^{and} /the poorer LOA instruments should over-estimate the number of confirmations of Hypothesis (8). Evidently additional principles beyond those used in the first seven hypotheses are needed.

Although the evidence is not unambiguous, the bulk of it tends to support each of the hypotheses: (1) that LOA is a relatively good predictor of behavior toward its object (the evidence for this prediction is ambiguous); (2) that LOA varies with the degree of success in school, the condition necessary for carrying high LOA's into action; (3) that LOA varies with the success orientations of the groups to which ^{the person} /belongs; (4) that LOA varies with the degree to which the social situation tends to produce success in occupationally-related areas of behavior; (5) that LOA varies with personal orientations tending to produce success in occupationally related areas of behavior; (6) that LOA varies with personal orientations expressing willingness to act independently; and (7) that LOA is related to self-conceptions concerning success or achievement orientation. As shown by the existence of correlation where none was predicted, LOA is evidently related to one or more other factors. But the exact nature of these is not clear.

This chapter has shown by empirical means that LOA is a valid concept in the sense that its behavior is lawful. This, in turn shows that a reliable, valid and practicable LOA instrument would be useful. Chapter II showed that the theory of LOA may be of importance to the behavioral sciences, especially to social

mobility, education and related areas. Chapter III showed that no existing LOA instrument is reliable, valid and practicable, although some instruments have some of these characteristics. Together these findings point to the need for an LOA instrument which has all three of the above characteristics. Present evidence suggests that the Occupational Aspiration Scale meets most of these requirements quite well. The reasons for this belief are presented in succeeding chapters.

of aspiration and attitudes, and as regards research on individual socialization and on individual movement in a social system (or social mobility). This was shown in Chapter II. (2) Empirically, available evidence tends to support much of the theory, especially as regards the occupational and educational consequences, and the psychological and social situational antecedents of differential levels of occupational aspiration. This is shown in Chapter IV. (3) This latter outcome is regarded as promising in view of the inadequacy of existing instruments for measuring the concept. As has been shown, the present techniques for measuring it are either applied only part of the general level of aspiration theory, or use only single stimulus questions, or are based on inadequate assumptions about the occupational hierarchy, or have too high a correlation with and are too similar to most practical purposes. There are other difficulties, too. Individually previous to the 1940s were the following deficiencies. Several lack a high degree of either internal or external validity, or their validity is untested. Second, several are probably susceptible to biases of internal consistency or stability or both, in part of them the reliability of these instruments is usually untested and in some cases it is untestable. Third, the rest of the instruments available today are not practical because it is too tedious to administer and score and because the subjects are often unable to respond to it in terms which are relevant to it. All this is shown in Chapter III.

CHAPTER V

DESIGN OF THE OCCUPATIONAL ASPIRATION SCALE

Preceding chapters have attempted to show several things about the concept of level of occupational aspiration. (1) Logically, it occupies a central place in the behavioral sciences, especially as regards theory of level of aspiration and attitudes, and as regards research on individual socialization and on individual movement in a social system (or social mobility). This was shown in Chapter II. (2) Empirically, available evidence tends to support much of the theory, especially as regards the occupational and educational consequences, and the psychological and social situational antecedents of differential levels of occupational aspiration. This is shown in Chapter IV. (3) This latter outcome is somewhat surprising in view of gross inadequacies of existing instruments for measuring the concept. As has been shown, the present techniques for measuring LOA either utilize only parts of the general level of aspiration theory, or use only single stimulus questions, or are based on inaccurate assumptions about the occupational hierarchy, or have too high an attrition rate and are too unwieldy to meet practical purposes. There are other difficulties, too. Instruments previous to the OAS have the following deficiencies. Several lack a high degree of either theoretical or empirical validity, or their validity is untested. Second, several are probably unreliable in terms of internal consistency or stability or both; in point of fact the reliability of these instruments is usually untested and in some cases it is untestable. Third, the best of the instruments available today is not practical because it is too tedious to administer and score and because the subjects are often unable to respond to it in terms which are relevant to LOA. All this was shown in Chapter III.

In brief, both the theory of LOA and the data available concerning its correlates show it to be a variable of considerable promise in explaining differential educational and occupational achievement. It follows that the variable could have practical importance to those concerned with educational achievement, vocational and educational counseling, and social mobility. But present techniques for measuring LOA are not adequate to the task.

The Occupational Aspiration Scale (OAS) was designed to measure LOA accurately and easily. In the present chapter we shall describe the design of this instrument. In the two succeeding chapters we shall present the results of the empirical evaluations which have been performed to date on the OAS.

General Description

The OAS is an eight item multiple-choice instrument. It includes items permitting responses at both the realistic and the idealistic expression levels of LOA, each at two time-dimension periods, called career periods in this context, short range (end of schooling) and long range (at age 30). The four possible combinations of these components are each assessed twice, thus giving a total of eight questions. The alternatives for each item consist of ten occupational titles drawn from among the ninety occupations ranked by the NORC (1947) study of the prestige of occupations (see Table 1). Each occupation is presented as a possible response only once on the form. Alternative responses for each item systematically span the entire range of occupational prestige, and are scored from zero to nine. Operationally, an item score of 9 indicates that the respondent has chosen an occupation from among the eight highest prestige occupations on the NORC scale, and an item score of 0 indicates that one of the eight lowest prestige occupations has been chosen. Thus, the total possible score for all eight items

Table 1.

Summary of the Relation Between the NORC Occupational Prestige Scores and Their Use in the OAS.

NORC Rankings		OAS		
Occupation	Score	Item	Question	Score
1) U. S. Supreme Court Justice	96	1	R-S	9
2) Physician	93	2	I-S	9
3) State Governor	93	3	R-S	9
4) Cabinet Member in Federal Government	92	4	I-S	9
5) Diplomat in U. S. Foreign Service	92	5	R-L	9
6) Mayor of a large city	90	6	I-L	9
7) College professor	89	7	R-L	9
8) Scientist	89	8	I-L	9
9) U. S. Representative in Congress	89	1	R-S	8
10) Banker	88	2	I-S	8
11) (Government Scientist)*	88	-	--	-
12) County Judge	87	3	R-S	8
13) Head of a department in a state government	87	4	I-S	8
14) Minister [or]**	87	5	R-L	8
15) Priest	86	6	I-L	8
16) Architect	86	7	R-L	8
17) Chemist	86	8	I-L	8
18) Dentist	86	1	R-S	7
19) Lawyer	86	2	I-S	7
20) Member of the board of directors of a large corporation	86	3	R-S	7
21) Nuclear physicist	86	4	I-S	7
22) Psychologist	85	5	R-L	7
23) Civil engineer	84	6	I-L	7
24) Airline pilot	83	7	R-L	7
25) Artist who paints pictures that are exhibited in galleries	83	8	I-L	7
26) Owner of a factory that employs about 100 people	82			

(continued)

*Titles in parentheses are not used in the OAS.

**Both are combined as a single alternative in the OAS.

(Continuation of Table 1)

NORC Rankings		OAS		
Occupation	Score	Item	Question	Score
27) Sociologist	82	1	R-S	6
28) Accountant for a large business	81	2	I-S	6
29) Biologist	81	3	R-S	6
30) Musician in a symphony orchestra	81	4	I-S	6
31) Author of novels	80	5	R-L	6
32) Captain in the army	80	6	I-L	6
33) Building contractor	79	7	R-L	6
34) (Economist)*	79	-	--	-
35) (Instructor in the public schools)*	79	-	--	-
36) Public school teacher	78	8	I-L	6
37) County agricultural agent	77	1	R-S	5
38) Railroad engineer	77	2	I-S	5
39) (Farm owner and operator)*	76	-	--	-
40) Official of an international labor union	75	3	R-S	5
41) Radio announcer	75	4	I-S	5
42) Newspaper columnist	74	5	R-L	5
43) Owner-operator of a printing shop	74	6	I-L	5
44) Electrician	73	7	R-L	5
45) Trained machinist	73	8	I-L	5
46) Welfare worker for a city government	73	1	R-S	4
47) Undertaker	72	2	I-S	4
48) Reporter on a daily newspaper	71	3	R-S	4
49) Manager of a small store in a city	69	4	I-S	4
50) Bookkeeper	68	5	R-L	4
51) Insurance agent	68	6	I-L	4
52) (Tenant farmer - one who owns livestock and machinery and manages the farm)*	68	-	--	-
53) Traveling salesman for a wholesale concern	68	7	R-L	4
54) Playground director	67	8	I-L	4
55) Policeman	67	1	R-S	3
56) Railroad conductor	67	2	I-S	3
57) Mail carrier	66	3	R-S	3
58) Carpenter	65	4	I-S	3

(continued)

*Titles in parentheses are not used in the OAS.

(Continuation of Table 1)

NORC Rankings		OAS		
Occupation	Score	Item	Question	Score
59) (Automobile repairman)*	63	-	--	4
60) Plumber	63	5	R-L	3
61) Garage mechanic	62	6	I-L	3
62) Local official of a labor union	62	7	R-L	3
63) Owner-operator of a lunch stand	62	8	I-L	3
64) Corporal in the army	60	1	R-S	2
65) Machine operator in a factory	60	2	I-S	2
66) Barber	59	3	R-S	2
67) Clerk in a store	58	4	I-S	2
68) (Fisherman who owns his own boat)*	58	-	--	-
69) Streetcar motorman	58	5	R-L	2
70) Milk route man	54	6	I-L	2
71) (Restaurant cook)*	54	-	--	-
72) Truck driver	54	7	R-L	2
73) Lumberjack	53	8	I-L	2
74) Filling station attendant	52	1	R-S	1
75) Singer in a night club	52	2	I-S	1
76) Farm hand	50	3	R-S	1
77) Coal miner	49	4	I-S	1
78) Taxi driver	49	5	R-L	1
79) Railroad section hand	48	6	I-L	1
80) Restaurant worker	48	7	R-L	1
81) Dock worker	47	8	I-L	1
82) Night watchman	47	1	R-S	0
83) Clothes presser in a laundry	46	2	I-S	0
84) Soda fountain clerk	45	3	R-S	0
85) (Bartender)*	44	-	--	-
86) Janitor	44	4	I-S	0
87) Share cropper - one who owns no livestock or equipment and does not manage farm	40	5	R-L	0
88) Garbage collector	35	6	I-L	0
89) Street sweeper	34	7	R-L	0
90) Shoe shiner	33	8	I-L	0

*Titles in parentheses are not used in the OAS.

Gowall, W. H., (unpublished data, 1955).

ranges from zero to seventy-two. This score is used to measure the individual's general LOA. It is designed, not as an absolute measure of LOA, but only as a measure of differential LOA. It is primarily for use on male high school students. (It is the belief of the writers that it may work well with females as well as with males, at this or younger ages, but belief has yet to be demonstrated.) Thus, the level and range of difficulty of the test items is oriented to male subjects of this age and educational status. The OAS is a self-descriptive instrument. It is easily administered in a group testing situation, but it may also be administered individually.

Historical Development

A research project conducted by Sewell and others (1948 and 1955) on youth in Jefferson County, Wisconsin, was especially influential on the design of the OAS.¹ This project investigated the educational and occupational plans and achievements of high-school youth. Some fifty-odd personality, performance, and social-situational variables were assessed on a sample of high school seniors in 1948. Seven years later, in 1955, the post-high school levels of educational and occupational achievement of these individuals were determined. The measurement of LOA based on North-Hatt scores (see pp. 29-31 and Report V of Part II) was found to be the best single 1948 predictor both of number of years completed at college ($r = .52$) and the prestige level of occupational achievement attained by 1955 ($r = .46$). The correlations of the other variables with educational and occupational achievement were lower. The more important of these and their correlation with educational and occupational achievement are: college plans (.40, .17), high school grade point averages (.41, .34), Level of Interest section

¹Sewell, W. H. (unpublished data, 1955).

²These data, and many others, are reported in Chapter IV.

of the Lee-Thorpe scale (.38, .28), Henmon-Nelson mental maturity scores (.32, .20), and parental socio-economic (Sewell scale) status scores (.28, .28).²

The measure of LOA on which these correlations are based, it will be remembered, was an index composed of the first orthogonal factor in a matrix of correlations of the North-Hatt prestige levels of the highest, lowest, free, and final occupational choices of the students. This study suggested that long-range ("10 years from now") occupational goals were important when attempting to effectively measure level of occupational aspiration at the high school level.

As we have noted, however, the North-Hatt technique has several disadvantages. (1) Considerable time and effort is involved in scoring responses. (2) Subjects frequently fail to respond. (3) Many responses are not specific enough to score. (4) Since only a small proportion of the total occupational titles have been empirically ranked, the prestige of most occupations is difficult to estimate.

The results of the Jefferson County study, and the problems encountered in attempting to measure LOA, led to the development of the OAS. It was designed to measure the LOA variable presumably assessed by the Jefferson County instrument while avoiding the problems encountered in the coding of free-responses.

(A copy of the OAS is included in Appendix A.)

Relation to the General Concept of Level of Aspiration

Expression levels and Time-dimension Periods. The wording of the stimulus-questions of the OAS in terms of expression levels and time-dimension periods is presented in Table 2. The wordings are intended as occupational applications of the two dimensions which provide estimates of the boundaries of the range of the person's level of aspiration. Thus the wordings flow directly from general level of aspiration theory.

² These data, and many others, are reported in Chapter IV.

Table 2

OAS Format: Combination of Expression Levels and Time-periods for each of the Four Question-wordings

Expression Levels	Time-dimension Periods	
	Short-range <u>S</u> (Initial Career-point)	Long-range <u>L</u> (Mature Career-point)
Idealistic <u>I</u> Level	Of the jobs listed in this question, which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your SCHOOLING IS OVER? (2 and 4)	Of the jobs listed in this question, which ONE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished? (6 and 8)
Realistic <u>R</u> Level	Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER? (1 and 3)	Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD? (5 and 7)

Each stimulus question specifies both an expression level and a time-dimension period, and all four possible combinations of expression levels and time-dimension periods are used to form the stimulus questions. The same stimulus question is presented twice.

The numbers in parentheses in Table 2 refer to the sequence of the items using the four types of questions. The letters which are underlined refer to the expression levels and time-dimension periods of the questions. Thus, the questions are presented in the following sequence: Question 1, realistic-short-range ("...which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER?"); Question 2, idealistic - short-range ("...which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your SCHOOLING IS OVER?");

Question 3, realistic - short-range (same as Question 1); Question 4, idealistic - short-range (same as Question 4); Question 5, realistic - long-range ("...which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD?"); Question 6, idealistic - long-range ("...which ONE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished?"); Question 7, realistic - long-range (same as Question 5); and Question 8, idealistic - long-range (same as Question 6). This system permits eight different estimates of the person's LOA, two estimates for each combination of expression levels with time-dimension periods.

The Continuum of Difficulty. Chapter II showed that occupational prestige (or societal evaluation) is the best single criterion available today to rank occupational titles on a continuum of difficulty. By far the best study of the prestige of American occupations is the North-Hatt study (NORC 1947), reviewed in Chapter II. It is best because it is based on an adequate sample of the American adult population, because it covers many occupations, and because it includes occupations from the entire American occupational hierarchy. For this reason, the NORC occupations and their ratings were selected as the criterion on which to base the continuum of difficulty for the OAS. Each stimulus question of the OAS is followed by a set of ten occupational titles, which are its response alternatives. Any one occupational title is presented as a response alternative only to one question. Using no occupational title more than once again works to minimize the specific effects of non-prestige factors in assessing a person's pure LOA. The occupational titles were systematically selected from the 90 occupations ranked by the NORC study (see Table 1). This selection was done in a way which makes sure that the response alternatives for each stimulus question span the entire range of the

prestige hierarchy or continuum of difficulty. Ten of the 90 NORC occupations were eliminated in order to reduce the number of occupational responses to 80 (eight stimulus questions by 10 alternatives per question). Of the remainder, the highest prestige occupation was assigned to Question 1, the second highest to Question 2, and so on down to the 80th which was assigned to Question 8. Table 3 illustrates how this was done. While each set of alternatives does not span the same area of prestige ratings, they do tend to span almost the same range of occupational prestige. The equality of ranges is only approximated because several of the occupations in the NORC ratings have the same average prestige score.

Table 3.

CAS Format: Distribution of 80 NORC Occupations Among the CAS items

80 NORC Occupations (High prestige)	CAS Items							
	1	2	3	4	5	6	7	8
1	•							
2		•						
3			•					
4				•				
5					•			
6						•		
7							•	
8								•
9	•	•	•	•	•	•	•	•
10	•	•	•	•	•	•	•	•
11	•	•	•	•	•	•	•	•
12	•	•	•	•	•	•	•	•
13	•	•	•	•	•	•	•	•
14	•	•	•	•	•	•	•	•
15	•	•	•	•	•	•	•	•
16	•	•	•	•	•	•	•	•
17	•	•	•	•	•	•	•	•
18	•	•	•	•	•	•	•	•
19	•	•	•	•	•	•	•	•
20	•	•	•	•	•	•	•	•
21	•	•	•	•	•	•	•	•
22	•	•	•	•	•	•	•	•
23	•	•	•	•	•	•	•	•
24	•	•	•	•	•	•	•	•
25	•	•	•	•	•	•	•	•
26	•	•	•	•	•	•	•	•
27	•	•	•	•	•	•	•	•
28	•	•	•	•	•	•	•	•
29	•	•	•	•	•	•	•	•
30	•	•	•	•	•	•	•	•
31	•	•	•	•	•	•	•	•
32	•	•	•	•	•	•	•	•
33	•	•	•	•	•	•	•	•
34	•	•	•	•	•	•	•	•
35	•	•	•	•	•	•	•	•
36	•	•	•	•	•	•	•	•
37	•	•	•	•	•	•	•	•
38	•	•	•	•	•	•	•	•
39	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•
41	•	•	•	•	•	•	•	•
42	•	•	•	•	•	•	•	•
43	•	•	•	•	•	•	•	•
44	•	•	•	•	•	•	•	•
45	•	•	•	•	•	•	•	•
46	•	•	•	•	•	•	•	•
47	•	•	•	•	•	•	•	•
48	•	•	•	•	•	•	•	•
49	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•
51	•	•	•	•	•	•	•	•
52	•	•	•	•	•	•	•	•
53	•	•	•	•	•	•	•	•
54	•	•	•	•	•	•	•	•
55	•	•	•	•	•	•	•	•
56	•	•	•	•	•	•	•	•
57	•	•	•	•	•	•	•	•
58	•	•	•	•	•	•	•	•
59	•	•	•	•	•	•	•	•
60	•	•	•	•	•	•	•	•
61	•	•	•	•	•	•	•	•
62	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•
64	•	•	•	•	•	•	•	•
65	•	•	•	•	•	•	•	•
66	•	•	•	•	•	•	•	•
67	•	•	•	•	•	•	•	•
68	•	•	•	•	•	•	•	•
69	•	•	•	•	•	•	•	•
70	•	•	•	•	•	•	•	•
71	•	•	•	•	•	•	•	•
72	•	•	•	•	•	•	•	•
73	•	•	•	•	•	•	•	•
74	•	•	•	•	•	•	•	•
75	•	•	•	•	•	•	•	•
76	•	•	•	•	•	•	•	•
77	•	•	•	•	•	•	•	•
78	•	•	•	•	•	•	•	•
79	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•
(Low Prestige)								

Ten of the ninety NCHC occupations were not used in the OAS. The reasons for this differ. In the first place, several of the titles are clearly redundant and were included in the NCHC study as a check on the reliability of the ratings. One of the redundant titles was eliminated from each such pair. Secondly, the titles "Minister" and "Priest" were combined as a single alternative "Minister or Priest." The reason for this is that if they were kept as separate alternatives, their selection would likely have a religious bias. Moreover, they have almost exactly the same NCHC prestige score. Finally, the title "Bartender" was excluded because evidence in the Jefferson County study indicated that the prestige of that "occupation" may be higher in the North Central States than in other areas.

On the OAS form the prestige ranks for each set of ten alternatives were placed in a non-hierarchical distribution to insure that the order of presentation would not correspond to the order of prestige. Exactly the same order of presentation is used for each set of response alternatives.

Scoring

All of the eight items are scored in the same way. Table 4 illustrates the re-arrangement of prestige scores and the corresponding scores for each of the ten response alternatives. The scores of alternative responses for each stimulus question range from zero to nine. The sum of all eight item scores is taken as the individual's level of occupational aspiration as measured by the OAS. Thus, the total score obtainable on the OAS ranges from zero to seventy-two. A copy of the scoring key is included in Appendix I.

Table 4.

Distribution of Prestige Scores of Occupational
Titles for Each OAS Item

Order of Presentation	Score
1	7
2	4
3	8
4	2
5	9
6	0
7	6
8	3
9	5
10	1

Administration

The OAS is intended to be administered in a group testing situation. The eight items are prefaced by a set of written instructions, which the tester reads over with the group at the beginning of the test period. These instructions and the first item are reproduced below:

THIS SET OF QUESTIONS CONCERNS YOUR INTEREST IN DIFFERENT KINDS OF JOBS. THERE ARE EIGHT QUESTIONS. EACH ONE ASKS YOU TO CHOOSE ONE JOB OUT OF TEN PRESENTED.

BE SURE YOUR NAME IS ON THE TOP OF THIS PAGE.

READ EACH QUESTION CAREFULLY. THEY ARE ALL DIFFERENT.

ANSWER EACH ONE THE BEST YOU CAN. DON'T OMIT ANY.

QUESTION 1. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER?

- 1.1 ☐ Lawyer
- 1.2 ☐ Welfare worker for a city government
- 1.3 ☐ United States representative in Congress
- 1.4 ☐ Corporal in the Army
- 1.5 ☐ United States Supreme Court Justice
- 1.6 ☐ Night watchman
- 1.7 ☐ Sociologist
- 1.8 ☐ Policeman
- 1.9 ☐ County agricultural agent
- 1.10 ☐ Filling station attendant

It is emphasized that there are no "right" or "wrong" answers, and that the respondents are not bound by a time limit. It has been suggested to the writers that the OAS is most successfully administered to children if the first two questions are read out loud so that he grasps what he is expected to do on each question, and so that he learns that the questions and their response alternatives really are different from each other. Any questions concerning the purpose of the test are answered by stating that the investigators are interested in the respondents feelings about various kinds of jobs. The meaning of various occupational titles is not described to the respondents should they request this during the administration of the OAS. Instead they are to impute to the titles whatever meanings they have for them. Respondents are not allowed any additional information whatsoever on the meaning of either the questions or the response alternatives. The terms BEST ONE, SURE I CAN GET, etc., are all defined by the respondents, as are the occupational titles. Ignorance of part of the occupational structure is a factor which may well limit the person's range of choice; if he does not know the meaning of a certain job title, this fact will be and should be reflected in his OAS score. Testers are sometimes concerned because some of the respondents feel they need more information, but the semi-projective nature of the OAS requires that the tester give no information beyond that which is specified. In brief, if the respondents state that they are having difficulty with selecting an occupational alternative for any question, they are simply told to do the best they can; leaving the testing situation as unstructured as possible.

Time in Administration and Scoring

The CAS has been administered to perhaps twenty different groups in the United States, about ten groups in Japan and four groups in Central America; and it has been given in the corresponding languages, English, Japanese, and Spanish. In Michigan, the form has been given to male and female students ranging from fifth grade children of working class fathers to college freshmen, and to persons having a wide but more or less normal range of intelligence. Almost every administration has been conducted in school. It has been administered by skilled and unskilled persons. This information is presented to show the fairly wide basis on which testing and scoring time is estimated.

Exact records of the time have not been kept, but those who have administered the form generally agree that it takes from five to ten minutes for the tester to give the instructions and answer questions, and from five to fifteen minutes for students to fill it out. Slow readers, young students and persons from societies where objective tests are unknown may take a few minutes longer. Most of the Michigan high school students who have filled it out seem to finish easily within fifteen minutes or less; testers have usually allowed a total instruction and response time of thirty minutes.

The form may be scored in one or two minutes. College students and literate adults may be trained to score the form in about five or ten minutes.

It should be emphasized that these data are not based on exact measurements of the timing. Ultimately such measurements should be made and reported. However, the estimates given above are probably accurate enough for most purposes. If anything, they probably err by overestimating the time, rather ^{than by} underestimating it.

Critique of the OAS Design

Fakability. Data on the fakability of the OAS are not available. But there is little doubt that it can be faked if the respondent is alert and if he wants to do so. It is our impression, however, that very few respondents are motivated to misrepresent themselves to a degree which would substantially invalidate the scores! As the data in the succeeding chapters show, this impression is probably well-founded.³

Unbalanced response alternatives. The response alternatives were chosen by putting the highest North-Hatt prestige occupation in the first set, the second in the second set, etc. This means that the mean North-Hatt prestige scores of the response alternatives to question (1) are slightly higher than those of question (2), etc. That is, $\bar{Y}_1 > \bar{Y}_2 > \bar{Y}_3 \dots \bar{Y}_8$. (Naturally, the means of responses persons make to the alternatives follow a quite different pattern. We refer here to the means of the alternatives presented to persons, quite apart from their responses to the alternatives.) This fact is obscured by our scoring technique, which gives a superficial impression that $\bar{Y}_1 = \bar{Y}_2 = \bar{Y}_3 \dots \bar{Y}_8$. The stimulus questions tap the combination of expression-levels and time-dimension periods as follows: Q_1 and Q_3 , realistic - short-range; Q_2 and Q_4 , idealistic - short-range, (I-S); Q_5 and Q_7 , realistic - long-range (R-L); Q_6 and Q_8 , idealistic - long-range (I-L). Given the present arrangement of response-alternatives, it follows that in the design of the OAS $\bar{Y}_{R-S} > \bar{Y}_{I-S} > \bar{Y}_{R-L} > \bar{Y}_{I-L}$. Parallelling the terminology in Chapter III, we may say that, in its present form, the OAS has unbalanced response alternatives. This probably influences the validity of the responses to some degree. It cannot affect it to any substantial degree, however, otherwise its influence would be evident in the empirical analysis which follows. But it certainly makes the OAS less elegant than it might be.

³See p. 136 for a suggestion for devising an unfakable modification of the OAS.

This slight imperfection could easily be overcome by changing the assignment of sets of response alternatives to stimulus questions. One appropriate change would be to assign response alternatives (1) and (8) to Q_1 and Q_3 , response alternatives (2) and (7) to Q_2 and Q_4 , response alternatives (3) and (6) to Q_5 and Q_7 , and response alternatives (4) and (5) to Q_6 and Q_8 . This would make equal the mean of response alternatives for the sum of each combination of expression levels and time-dimension periods, as follows: $\bar{X}_{R-S} = \bar{X}_{I-S} = \bar{X}_{R-L} = \bar{X}_{I-L}$.

Error due to Response Sets. When a person's responses to later questions are controlled by the way he responded to the first questions, rather than by the meaning of the questions, it is said that he has developed a "response set" which biases his score. The OAS may be subject to this difficulty, although there is no evidence concerning it. This possible difficulty may be simply remedied by randomizing in the order of presentation of response alternatives.

Summary

In the terms used in Chapter III, the OAS is a direct, continuous, multiple-item, structured response, complete, and balanced instrument. It is rapidly administered. It includes question-wording at the idealistic and realistic expression levels as well as at the short-range and long-range time-dimension periods. The criterion for scoring responses to the occupational alternatives is based on an objective and relatively unbiased set of occupational prestige ranks over the full range of prestige. This means that the OAS meets the requirements for measuring LOA as a special case of the general concept level of aspiration. There are at least three minor criticisms of the OAS: it is probably fakable, its response alternatives are unbalanced, and it may be subject bias due to response sets. These difficulties should be corrected in future editions.

CHAPTER VI

INTERNAL CHARACTERISTICS OF THE OCCUPATIONAL ASPIRATION SCALE

This chapter reports the results of research completed to date on the internal characteristics of the OAS. First, the samples and data upon which the analyses were based are described. Second, highly tentative norms, based on the most extensive of these samples, are presented. Third, all data available on the reliability of the OAS are reported. Fourth, the most nearly direct data available on the validity of the OAS are reported. It should be emphasized that definitive evidence on predictive validity of the OAS will not become available until the subjects of the samples have finished their education and have established themselves in the occupations. Data available at present permit only indirect approaches to assessing the validity of the instrument. Chapter VII, too, addresses itself to indirect assessment of validity of the OAS. It differs from the present chapter in that it uses external criteria in much the same way as Chapter IV did for the LOA concept.

Sites, Subjects and Data

The Lenawee County Site. Most of the data presented in this monograph were collected from the male students in the Lenawee County, Michigan, school system during the spring of 1957. Lenawee County is located near the extreme southeastern corner of the state. Its southern boundary is the Michigan-Ohio state border. It is rectangular in shape, being about 24 miles from north to south, and 30 miles from east to west--a total of about 720 square miles. The county lies in a rich area of various kinds of agricultural specialties, from corn-growing to beef-feeding to truck-gardening. Nevertheless, it is by no means

an isolated area. Its geographical center, Adrian, is about 55 miles southwest of downtown Detroit (1960 population about 1,850,000), 30 miles northwest of downtown Toledo, Ohio (1960 population about 300,000), 30 miles southwest of Ann Arbor (1960 population about 65,000), and 30 miles southeast of Jackson (1960 population about 50,000). The county is served by excellent roads. Practically all incorporated places are linked to each other and to surrounding cities and towns by paved highways, and all-weather roads are readily accessible to almost every home in the county. Besides its agriculture, the county had, in 1957, a flourishing light industry.

Excellent educational facilities are available to county residents. This is especially true at the upper levels. Detroit, Toledo, Ann Arbor and Ypsilanti (a small city about 35 miles northeast of Adrian) each are sites of one or more universities. These vary in quality and in cost. There are also several small colleges within commuting distance of various parts of the county. One of these is in Adrian. The high schools also vary in quality but there is little reason to believe that any of them are of poor quality. Adrian has two high schools. One is a large public school and the other is a small Catholic school. These and all other schools in the county draw at least some students from the surrounding open country areas. All but one of the incorporated places have high schools serving the children and youth from the town and from the surrounding countryside. The names of the towns with high schools, and their populations as estimated in the preliminary reports of the 1960 United States Census, are: Tecumseh (7,008), Blissfield (2,660), Hudson (2,531), Morenci (2,201), Clinton (1,467), Deerfield (860), Britton (617), Addison (568) and Onsted (540). An additional high school is located at Sand Creek, an unincorporated hamlet. There is no high school in Clayton (470). Cement City is partly in Lenawee County and has a high school,

but it was not included in the sample because most of its population, including those of high school age, reside in another county. (This town was used as the site for pre-testing the questionnaires.) The rough outlines of the county's stratification system are about what one would expect by knowing its size and its economy. It has a full range of social class levels: a few wealthy families, a number of families of professionals, many families of small business owners, and many families of farmers, clerical, skilled and unskilled workers.

Lenawee County Subjects. The subjects consisted of the 442 seventeen-year-old boys in the county's schools in the spring of 1957. This age group, specifically defined as those born between July 1, 1939 and June 30, 1940, was selected to maximize the likelihood that the boys would be concerned with their educational and occupational futures. Most of those no longer attending school, about 12 per cent of the total age group, had taken full time jobs. All who were not in school were excluded. Their experience with the world of work was qualitatively different than the experience of those in school. Girls were excluded because the OAS was not specifically designed for them. (The OAS responses and the relation of these to other aspects of behavior of persons other than those for whom the test was originally intended should be studied at a future date.)

Lenawee County Data. In addition to the OAS, the following instruments were also administered to the Lenawee sample at the same time:

1. The 16 Personality Factor Test, Form B (Institute for Personality and Adjustment Testing, 1950), (Abbr.: 16 P-F T).
2. Test of G - Culture Free-Scale 3A (Cattell and Cattell, 1950), (Abbr.: CFIQT).

3. The California Test of Personality (Tiegs, et al., 1953), (Abbr.: CTP).
4. The MSU Work Beliefs Check-List, (Abbr.: WBC-L).
5. A questionnaire, entitled Occupational Plans of Michigan Youth, concerning educational plans, occupational aspirations, family data, sociometric questions, and related personal data. (Abbr.: OPMY).

The unpublished instruments (4 and 5) are presented in Appendix C. All of the Lenawee data used in this monograph were converted to normalized T-score form (Edwards, 1954). (As it happens, the OAS data are approximately normally distributed anyway). All data were punched on IBM cards in preparation for machine analysis. School records for the year 1956-57 were reproduced to provide a basis for estimates of grade-point averages and course programs. Operational definitions of all variables may be ^{found by} referring to the above instruments and the coding key (Appendix IV), which defines the categories into which each response was classified. Means, standard deviations, and intercorrelations of all important variables are presented in Appendix I.

During the spring of 1958, a sixth form was mailed to a sub-sample consisting of all previously tested boys who were residing on farms at the time of the initial testing. These data were not used in the present analysis, but are listed here because they form part of the data presented in Report IV of Part II of the monograph. This mailed questionnaire form is called:

6. Educational Beliefs of Farm Boys, (Abbr.: ENFB). Operational definitions of the variables extracted from the ENFB are also to be found in the coding key (Appendix IV). ^{coding key also presents} (The/ all other operational definitions of variables used in any present or future publications based on any of the above forms, used on this sample or other samples used in this monograph.)

The Mason Site, Sample and Data. The OAS was also administered to a group of junior and senior high school boys in Mason, Michigan, (1960 population, U.S. census preliminary estimates, 4,490) during the winter of 1958-1959 at two different times about 10 weeks apart. Different but equivalent forms were used for the pre-tests. The initial size of this sample was 117, with a useable N of 114. The size of the sample was reduced to 94 at the second testing, due to absences from school. The Mason sample was selected for the test-retest reliability analysis of the OAS, using two different forms of the OAS (to be explained below). It was chosen because the ecological area and the characteristics of the respondents were roughly similar to those of the Lenawee sample. Mason, like Lenawee County, is situated in the urban half of southern Michigan. It is about a dozen miles from Lansing, an industrial center of 108,000 persons. But Mason's immediate surroundings are agricultural. It also has a little light industry. The subjects thus include both rural and urban residents, and are from a range of social class levels. The raw scores of the Mason OAS data are approximately normally distributed, and they were not converted to T-score form. The Mason data were punched on IBM cards for machine analysis. Two other types of data were collected on a short questionnaire not used in any of the present analyses; these are described where they are used in Report VI of Part II.

Non-Response Rate

The OAS is quite easy to answer. Non-response rates, incomplete response rates, and unusable response rates together are less than one per cent in the group administrations conducted on the above and other samples. This is at least as low as any other technique, and is much lower than the most valid of other techniques. The latter, the North-Hatt technique used in the Jefferson and Lenawee Counties, has an unusable and non-response rate of 17 to 25 per cent.

Norms

Little normative data are available at this time. The reasons for this are three. First, norms are most useful for counseling purposes. At this stage of the evaluation of the OAS the greatest need is for detailed analysis of its general characteristics such as reliability, validity, and correlates. The attention of the investigators has, therefore, been directed to research evaluating the instrument rather than to compiling norms. Second, broad norms are often misleading in that the unwary user may assume that they are based on probability samples drawn from a homogeneous population. This is not often the case, however, because probability samples, and even their cheaper substitutes, are quite difficult to obtain. Third, many believe that each testing unit should develop its own set of norms for its own particular purposes.

Nevertheless, the OAS scores for the 441 Lenawee County boys who completed this and other instruments were normalized and converted to T-score form. The distribution of raw scores, percentiles, and T-scores are presented in Appendix A. The observed total scores range from 2 to 65, with a mean of 36.20 and a standard deviation of 12.99. The distribution of total OAS scores appears to be approximately normal in shape and spans most of the range of the total possible scores of the OAS. The same form of the OAS, administered to the Mason subjects the first time they were tested, yields a mean and standard deviation of 37.24 and 11.70 respectively. An alternate form of the OAS, form Y, was used in the post-test administration for the test-retest reliability study on the Mason sample. The latter form (which will be described in the following section dealing with the reliability study) has a mean of 37.63 and a standard deviation of 11.90. Table 5 summarizes the descriptive statistics for both forms of the OAS administered to the two samples. The table shows that the various means and standard deviations are quite close.

Table 5

Descriptive Statistics for the OAS

Sample	Form	Mean	SD	Range	SE _m
Lewis N=441	I	36.20	12.99	63(2.65)	0.62
Mason pre-test N=114	I	37.24	11.70	46(17-63)	1.10
Mason post-test N=94	I	37.63	11.90	53(13-66)	1.23

Reliability

We have taken the discussion of reliability in Technical Recommendations for Psychological Tests and Diagnostic Techniques (1954, pp. 28 ff.) as a guide for the terminology and procedure of this section. This manual distinguishes three types of reliability coefficients:

- 1) Coefficient of internal consistency: "We shall refer to a measure based on internal analysis of data obtained on a single trial of a test as a coefficient of internal consistency."
- 2) Coefficient of equivalence: "A correlation between scores from two forms given at essentially the same time we shall refer to as a coefficient of equivalence."
- 3) Coefficient of stability: "The correlation between test and retest, with an intervening period of time, is a coefficient of stability. Such a coefficient is also obtained when two forms of the test are given with an intervening period of time."

The two reliability analyses proposed for the OAS are based on coefficients of internal consistency and stability. The design of the OAS makes inappropriate the most common techniques for measuring these types of reliability. Appropriate techniques and the reasons why they are needed will be specified in the next paragraphs.

Equivalent Halves. If the OAS items were divided by the odd-even technique, one-half of the test would consist of all the realistic items and the other half would consist of all the idealistic items. These expression levels have been thought to have a low correlation with each other. If this were true (an hypothesis to be tested later), an odd-even division would automatically and unfairly show a low reliability estimate. The present analysis divides the items on a different basis, one which remains true to the "spirit" of the odd-even technique while eliminating the possible error due to the supposed low correlation between realistic and idealistic expression levels. Each of the four types of question wordings in the OAS is assessed twice. Thus, it is reasonable to split the OAS into two parallel halves, each of which contains all of the four possible question wordings. Both form X and form Y, (to be described below) were split by this method, which is outlined in Table 6. Thus the stimulus questions of the two halves are identical. The response alternatives, however, are not identical, but they are as close to identical as it is possible for them to be. For each individual, the sum of scores for items 1, 2, 5, 6 represents the score on the "A" half of the OAS, while the sum of scores for items 3, 4, 7, 8 represents the score on the "B" half of the OAS. All estimates of internal consistency coefficients are based on these scores. Coefficients of internal consistency of the OAS were computed for the Lenawee sample and for both forms administered to the Mason sample.

Table 6

Format for Dividing the OAS into Two Parallel Halves

Content Assessed	OAS Halves	
	A	B
	Item Numbers	
Realistic - Short-Range	1	3
Idealistic - Short-Range	2	4
Realistic - Long-Range	5	7
Idealistic - Long-Range	6	8

Equivalent Forms. A final characteristic of the OAS dictates a slight modification of the usual method for assessing stability. Alternate form Y, which has been mentioned before, was developed to take this characteristic into account. (Form I is the name given to the original form which has been described in Chapter V.) The OAS has only eight items and eight corresponding sets of response alternatives. If the same form were administered to the same group with a period of only a few months intervening, it is highly probable that memory of previous responses would spuriously inflate the test-retest reliability correlation. This suggests the need for a different set of response alternatives. But these are not available. The OAS (Form I) uses eighty of the original ninety NORS (1947) titles, and no comparable study of occupational prestige exists in the literature, such as one which provides prestige ranks for eighty other occupational titles. For this reason it is impossible to construct an equivalent form of the OAS which would be based on different but equivalent occupational titles. Instead, the following procedure was used to develop the alternate form (form Y) which reduces the effect of memory on the retest responses, and which tends to insure that both forms share a maximum degree of content similarity.

Form Y of the OAS uses exactly the same stimulus questions and response alternatives as does form X. It differs from form X only in that no particular stimulus question has the same particular set of response alternatives as it had on form X. Table 7 presents the rearrangement of stimulus questions and response alternatives. The sets of response alternatives are lettered from A to H in order of their appearance on form X. Thus, form Y has the same general organization as does form X. The two forms differ only in that the alternatives which appear with item one in form X appear with item eight in form Y, and so on until the alternatives which appear with item eight in form X appear with item one in form Y. Both forms are presented in Appendix A.

Table 7
Order of Response Alternatives for Forms X and Y
of the OAS, by Stimulus Question Content

Sets of Response Alternatives (in order of appearance on Form X)	Stimulus Question Content			
	Realistic Short-range	Idealistic Short-range	Realistic Long-range	Idealistic Long-range
	Form (Letter) and Order (Number) of Response Alternatives			
A	X1			Y8
B		X2	Y7	
C	X3			Y6
D		X4	Y5	
E		X5	X5	
F	Y3			X6
G		Y2	X7	
H	Y1			X8

Reliability data for the response scale were calculated for each of the eight stimulus questions. Although there are no response alternatives for the eight stimulus questions, very little data on the other variables. Thus missing data on other variables resulted in a reduced sample size for these tests. Only 25 persons in the Navy sample responded to all OAS items on both forms. Most of this attrition is due to absence from school. All the effects of this attrition on the reliability estimates is probably inconsequential.

Selected Descriptive Statistics of Equivalent Halves and Forms. The crucial datum in assessing reliability is the reliability coefficient, or statistic which estimates the degree to which two attempts to score persons on a test result in a similar ordering of persons. But there are other data which are often useful for understanding the meaning of the reliability data. They include such statistics¹ as means, standard deviations, standard errors, and the like. These data for the equivalent halves are presented in Table 8. (The size of the Lenawee County sample was reduced to 365 and that of Mason to 85 due to technical problems.¹) In general, the table shows that for each sample the two halves have approximately the same means, standard deviations, and standard errors of the means. The differences between samples in the size of the standard error of the mean are due mostly to differences in sample sizes.

Table 8
Selected Statistics for Equivalent Halves of the OAS.
Lenawee and Mason Samples.

Statistic	Sample, Form, and Half					
	Lenawee		Mason			
	X		X		Y	
	A	B	A	B	A	B
Mean	18.11	17.95	17.69	17.98	19.68	18.46
SD	6.73	6.81	6.39	6.40	6.10	6.66
SE _n	0.35	0.36	0.69	0.69	0.66	0.72
N	365	365	85	85	85	85
SE _{mi}	0.28		0.52		0.62	
t	0.57		0.56		1.97	
d.f.	364		84		84	
P	>.05		>.05		>.05	

¹The reliability data for the Lenawee sample were calculated together with a number of other variables. Although there are 441 persons for whom OAS forms are complete, many lack data on the other variables. Thus missing data on other variables resulted in a reduced sample size for these tests. Only 85 persons in the Mason samples responded to all OAS items on both forms. Most of this attrition is due to absence from school. But the effects of this attrition on the reliability estimates is probably inconsequential.

In addition, two types of hypotheses were tested: that of equality of variances of each pair of halves, and that of equality of means of each pair of halves. An F test² was used on the former and a t test³ was used on the latter. The null hypothesis must be accepted for both types of tests. The general conclusion to be drawn is that the two halves of the OAS are quite similar in means, standard deviations, and related data.

The same analysis was applied to the means and variances of Forms X and Y administered to the Mason sample. The total scores of eighty-five individuals who had completed both forms of the OAS were included in this analysis. Table 9 presents the means, standard deviations, and standard error of the means for each of the two forms of the OAS.

²In evaluating the difference between two means by the t test, it is implicitly assumed that the population variances from which the samples are drawn are equal. See Edwards (1954), pp. 271-273. The test for homogeneity of two variances is based upon the distribution of F :

$$F = \frac{SD_1^2}{SD_2^2}, \text{ where } SD_1^2 \text{ is the larger of two independent estimates of the assumed common population variance and } SD_2^2 \text{ is the smaller.}$$

³See Edwards (1954), pp. 246-254 and p. 278 ff. The standard error of the difference between the means of paired observations is given by:

$$SE_{md} = \sqrt{SE_{m1}^2 + SE_{m2}^2 - 2r SE_{m1} SE_{m2}}, \text{ where:}$$

SE_{m1} = the standard error of mean 1

SE_{m2} = the standard error of mean 2

r = the correlation coefficient between the pairs of observations, and:

$SE_m = \frac{SD}{\sqrt{n}}$, where SD = the estimated standard deviation of the population
 n = number of observations.

For the t test, $t = \frac{M_1 - M_2}{SE_{md}}$, with $n - 1$ degrees of freedom (d.f.)
 where n = number of paired observations.

slightly higher mean on form Y may be simply a reflection of the so-called "practice effect" involved in testing the same sample on the same trait.

An F test for the significance of the difference between the variances of each form indicates that it is not significant at the .05 level. However, a t-test for the significance of the difference between the means indicates that the null hypothesis of no significant difference must be rejected at the .01 level.

Table 9

Means, Standard Deviations, Standard Error of the Means, and Standard Error of Mean Difference for Two Forms of the OAS Based on the Total Score. Mason Sample Only.

Statistic	OAS Forms	
	X	Y
Mean	35.67	38.14
SD	11.87	11.41
SE _m	1.66	1.53
N	85	85
SE _{md}	0.86	
t = 2.87 d.f. = 84 P < .01		

In summary, the two halves of the OAS for both forms and on both samples appear to be more or less equivalent in terms of the means and variances. There is an important exception to this, however. The two forms of the OAS administered to the Mason sample approximately ten weeks apart, while equivalent in terms of the variance of their total scores, are not equivalent in terms of the mean of their total scores. Form Y, used in the post-test, has a statistically significantly higher mean than does form X. This is interpreted as meaning that the two forms are not equivalent. However, other conclusions are equally plausible. For one, the slightly higher mean on form Y may be simply a reflection of the so-called "practice effect" involved in testing the same sample on the same trait.

Reliability of the OAS: A Coefficient of Internal Consistency and Stability.

The central data in reliability estimates are the reliability coefficients. Table 10 summarizes the results of the analyses. All coefficients were computed by the product-moment method. The split-half internal consistency coefficients obtained by correlating the equivalent-halves of the OAS were corrected by the Spearman-Brown Prophecy Formula. These are based on parallel halves. The test-retest or stability coefficient is based on equivalent forms.

Table 10
Reliability Coefficients and Standard Errors of Measurement for the OAS

Form	Sample	SD ^a	Method	Reliability		SE _M
				r _{tt}	r _{ab}	
X	Lenawee (N=365)	12.92	Parallel Halves	+.82 ^b	+.69	5.48
X	Mason (N=85)	11.87	Parallel Halves	+.84 ^b	+.72	4.75
Y	Mason (N=85)	11.41	Parallel Halves	+.75 ^b	+.60	5.70
X and Y	Mason (N=85)	--	Equivalent Form: Test- Retest - 10 week interval	+.77	--	--

a) The standard deviation is computed from the total raw score based on the entire eight items of the OAS.

b) r_{tt} estimated from the Spearman-Brown Prophecy Formula: $r_{tt} = \frac{2r_{ab}}{1 + r_{ab}}$,

where r_{tt} = estimated reliability of eight items OAS, and

r_{ab} = computed correlation between parallel halves A and B of OAS.

See Edwards (1954), pp. 176-177.

An inspection of Table 10 shows that estimates of the reliability of the OAS range from .75 to .84. Although none of the coefficients are exceptionally high, they tend to fall within a narrow range of similarity and, taken as a group, yield a mean reliability estimate of about .80.⁴

Standard Errors of Measurement. The standard errors of measurement for each administration of the OAS are presented in the last column of Table 10. Since reliability coefficients are sensitive to relative ranks of individuals within the group under consideration and to the spread of scores of the group, they indicate the reliability of the test for that group. The standard error of measurement (SE_M), however, is less sensitive to this variation since it takes into account both the reliability coefficient and the standard deviation for each group.⁵ Moreover, the SE_M is more useful in directly evaluating the OAS scores of individual respondents. It is, in short, an estimate of the variation of observed scores around the "true" score of the individual and as such indicates how large a margin of error should be allowed for in the OAS scores. Table 10 also shows that estimates of the SE_M for the administrations of the OAS range from values of 4.75 to 5.70 with the mean SE_M equal to 5.31.

Summary. The results of the reliability study of the OAS indicate that several independent analyses exhibit substantial agreement with respect to reliability coefficients and standard error of measurement. It seems reasonably safe

⁴Fisher's z transformation, properly used to average r values, was not used in this instance because the r values are nearly the same size.

⁵The formula is $SE_M = SD \sqrt{1 - r_{tt}}$, where SD is the standard deviation of the obtained scores of a group and r_{tt} is the reliability coefficient for the same group. See Test Service Bulletin No. 50 (1956) for a discussion of the SE_M .

to conclude that the reliability of the OAS is about .80 and that the standard error of measurement is close to 5.30. Moreover, the coefficient of stability (.77) measured over a ten week interval agrees quite well with the coefficients of internal consistency (.75, .82, and .84).

It is concluded that the OAS appears to be reliable enough for research purposes and for use in counseling individuals. However, the reliability coefficient tells us only that individuals tend to retain the same relative rank on the LOA variable in their group from one test situation to another. The standard error of measurement tells us more concerning observed individual variation. The SE_M estimates of the OAS suggest that classifying individuals into high, medium, and low LOA represents a fairly realistic appraisal of the accuracy of the OAS. Finer discriminations would only lead to an unjustified pseudo-precision.

Validity

The best method of measuring the validity of a device is to measure its correlation with the behavior it is supposed to predict. Unfortunately, such data are not available at this time. Several years must elapse before all of the first boys to take the OAS will have completed their education and military service, and will have stabilized their positions in the occupational hierarchy. For the present we must be content with other, more indirect, approaches to assessing the validity of the OAS. None of these yield a dependable coefficient of validity and only one yields any such coefficient. Instead they tell us generally whether the OAS appears to be valid or does not appear to be valid. We shall approach these analyses in four general ways. The first three will be reported in this chapter because they are those closest to predictive validity, and the last will be reported in the next chapter. Of the former three, the first is the correlation with a free-

response technique for measuring LOA, the second is concerned with the profiles of responses, and the third is a study of the factorial structure. The second and third approaches will be grouped together under the title "Internal Evidences of Validity." The data on factorial structure use information from the OAS and from the free-response instrument, treated separately and together.

Correlation with a Free-Response LOA Instrument. In chapters III and IV we have referred to another LOA instrument which was administered to the Lenawee sample. This instrument is almost identical to that used by Sewell and Haller in the Jefferson County study. (It was that instrument which was found to have a correlation of $+.46$ with North-Hatt prestige level of occupational achievement and a correlation of $+.57$ with number of years of college completed -- both of the later data having been collected seven years after measuring the subjects' LOA.) The present free-response instrument differs from the last only in a few minor ways. (1) In the Jefferson County study the LOA was measured by a question including the words "10 years from now" while in Lenawee these words were replaced by "when I am thirty years old," so that the wording would parallel that of the OAS stimulus questions. (2) The Jefferson instrument included the Lee-Thorpe LI scores as one among several estimations of LOA contributing to the total score. In Lenawee the LI scale was dropped because the Jefferson study showed it to be almost uncorrelated with the other combination, the mean of the North-Hatt ratings. (3) The Lenawee free-response instrument's coding procedure is identical with that of the Wisconsin study,⁶ except that the score is the mean

⁶Responses were coded in terms of actual and estimated NORC ratings of occupational prestige. As in other research using NORC data, ratings of many occupational choices had to be guessed because they were not among those evaluated by the NORC sample.

of all different occupational choices listed by the subject in response to the various LOA stimulus questions. There are 365 persons for whom complete free-response LOA data are available.⁷

The product-moment correlation coefficient of this instrument with the OAS is $r = +.62$. This figure, an estimate of concurrent validity, is the only validity data available on the OAS. It shows that there is a substantial but far from perfect correlation between the OAS and the free-response technique based on NORC ratings. This free-response instrument is almost identical to the Jefferson County which is known to have predictive validity. Such evidence is, however, at best only suggestive of the possibility that the OAS may be valid. There is no way of using the evidence decisively. Thus the OAS has a moderately high correlation with an instrument much like one which has a moderate correlation with the behavior it is supposed to predict. More indirectly, however, a study of Chapter IV will show that the free-response instruments used in Jefferson County and Lenawee County are probably the most accurate indicators of LOA in existence: their correlations with the criteria being predicted in the various hypotheses of the chapter are generally higher than are the correlations with other LOA instruments. So we can modify our previous statement this much: the OAS has a moderately high correlation with the best of the previous LOA instruments.

Internal Evidences of Validity. The analysis of the internal structure of the OAS involves two distinct conceptual problems. The first is that of differential scores by particular expression levels and by particular time-dimension periods. That is, generally speaking idealistic LOA's are thought to be higher than realistic LOA's and long-range LOA's are thought by many to be

⁷This is the sample on which the reliability analyses were based.

higher than short-range LOA's. The second conceptual problem regarding the internal structure of the OAS is that of the factorial independence of each expression level and each time period. That is, some have seemed to suggest that there are several relatively independent "kinds" of LOA: e.g., idealistic vs. realistic, or long-range vs. short-range. The first problem will be handled in terms of a profile analysis of the average item scores; the second problem will be treated in terms of orthogonal factor analyses.

The rationale of the profile analysis is simple. A profile will show whether the idealistic expression level scores tend to be higher than those of the realistic, and whether the long-range time-dimension scores tend to be higher than those of the short-range. The rationale for factor analysis is equally simple. If subsets of the items co-vary, they will be detected by factor analysis, and each subset may be assigned a name corresponding to the content common to all of the items of which it is composed. If more than one subset accounts for considerable variance, then it must be concluded that the OAS consists of more than one psychological variable. If only one subset accounts for much common variance, then it may be concluded that the OAS is a factorially pure instrument.

A. Profile analysis. The relative sizes of scores of responses to each expression level and time-dimension period of the OAS are presented in Table 11. Data are taken from the Lenawee sample (N= 365), as well as forms X and Y from the Mason sample (N=85). An estimated score for each combination of an expression level with a time-dimension period was calculated by averaging the scores for each of the two OAS items including the respective expression levels and time-dimension periods (the highest possible mean score is nine and the lowest is zero). The means for each administration are presented in the cells of the

Table 11

Mean Scores for All Combinations of Expression
Levels and Time-Dimension Periods,
Lenawee and Mason X and Y Samples

Time-Dimension Periods	Expression Levels		Average for Time- Dimension Periods
	Realistic	Idealistic	
Short-range	2.99 (L)	5.12 (L)	4.05 (L)
	3.00 (MX)	4.81 (MX)	3.91 (MX)
	4.79 (MY)	5.42 (MY)	5.11 (MY)
Long-range	4.21 (L)	5.92 (L)	5.07 (L)
	4.08 (MX)	5.92 (MX)	5.00 (MX)
	4.16 (MY)	4.69 (MY)	4.48 (MY)
Average for Expression Levels	3.60 (L)	5.52 (L)	
	3.54 (MX)	5.37 (MX)	
	4.86 (MY)	5.06 (MY)	

L: Lenawee Sample (form X); MX: Mason pretest sample (form X);
MY: Mason post-test sample (form Y).

table. The source of the data for each mean is in parentheses. The overall means for the four questions measuring each expression level are presented in the bottom marginals, and the overall means for each time-dimension period are presented in the right-hand marginals. With one set of exceptions, these data show the predicted trends. For each administration, the realistic levels are lower than the idealistic at both time-dimension periods, and of course this is reflected in the trends shown in the bottom marginal. For the Lenawee and Mason pre-test (form X) data, the long-range means are higher than the short-range

means at each expression level, and of course for the overall average. However, for the Mason post-test (form Y) data, the reverse is true; long-range means are lower than short-range means at each expression level used for the overall average.

It is concluded that there is a tendency for the two expression levels and time-dimension periods to produce predictably different profiles of response. As anticipated, the idealistic means are higher than realistic means. There is also a tendency for long-range means to be higher than short-range means, but the Mason post-test data show the opposite pattern. Probably some factor in form Y is producing the aberrant pattern, perhaps a memory effect from having previously taken form X; or perhaps it is due to another factor such as the lack of balance in the response alternatives (see Chapter V). Later research should attempt to find out why this occurs.

B. Factorial Structure. The usual approaches to the factor analytic study of validity base their conclusions on the correlations of the items or sub-test scores of an instrument. This approach may be called the intra-instrument technique. Another approach is possible, however. If two instruments are each saturated with one main factor and if that factor is the same in both instruments, then the factor analysis of the correlation of all items (or sub-scales) of both instruments should show the existence of one factor. This may be called the inter-instrument technique. Both will be used in this section.

1. Intra-instrument technique. The OAS items for the Lenawee sample and for the Mason pre-test form X and post-test form Y of the OAS were intercorrelated and factor analyzed. The purpose of the factor analysis is to determine the factorial structure of the OAS. Several reasonable factor patterns are possible. (1) There might be four factors, one for each combination of expression levels and time-dimension periods; (2) there might be two factors, one for expression

level and one for time-dimension; there might be three factors, (3) one for expression level, one for long-range and one for short-range, (4) or one for time-dimension, one for realistic level and the other for idealistic level; (5) there might be one main LOA factor saturating all questions. There might also be any one of these patterns and some unanticipated patterns, or there might be a completely unanticipated pattern. In any case, there are available three different applications of the OAS, including two different forms administered to one sample, on which to base conclusions about the factorial structure of the test. A conclusion will be drawn only if it is supported by all three of the resulting factor analyses.

For the Lenawee data, the OAS item scores (normalized T-scores) were intercorrelated for the 441 boys who completed the form. The resulting matrix is presented in Table 12. For both sets of Mason data the raw scores were intercorrelated, using the 85-person sample. The Mason pre-test form X matrix is presented in Table 13, and the Mason post-test form Y matrix is presented in Table 14. The only noteworthy feature about them is that all of the items have a modest degree of positive correlation with each other. The correlations in tables 13 and 14 are more variable than those in Table 12, but this is doubtless due to the smaller sample size.

Each correlation matrix was factor analyzed by the principal axes method (Cattell, 1952, pp. 129 ff.). Communalities for the Lenawee matrix (Table 12) were estimated by Guttman's technique (1958), and for the Mason matrices (Tables 13 and 14), by Burt's technique (Cattell, 1952, p. 154). Eight principal axes were extracted from each matrix. In each matrix only three accounted for a substantial percentage of the total matrix variance, 90 per cent for Lenawee, 91 per cent for Mason pre-test form X, and 100 per cent for Mason

post-test form Y. Each set of three principal axes was rotated to approximate orthogonal simple structure by means of the Neuhaus-Wrigley (1954) quartimax method. The rotated factor loadings for each of the three largest factors, and the principal axes from which they were derived are shown in Tables 15, 16, and 17. Tables 15, 16 and 17 present the factor analyses of the three matrices; Lenawee, Mason pre-test form X and Mason post-test form Y, in that order.

Table 12

OAS Item Correlation Matrix, Lenawee Sample (N=441)*

	..Item							
	1	2	3	4	5	6	7	8
1. R-S	(45)	24	40	37	27	26	31	28
2. I-S		(47)	37	36	29	36	27	40
3. R-S			(56)	42	44	34	42	43
4. I-S				(54)	39	42	35	46
5. R-L					(53)	45	43	34
6. I-L						(52)	39	38
7. R-L							(51)	40
8. I-L								(54)

*Decimal points omitted. All coefficients are positive and are statistically "significant" at or beyond the .01 level (one-tailed test). Figures in parentheses are the estimated communalities. The abbreviations stand for Realistic (R), Idealistic (I), Short-range (S), and Long-range (L).

Table 13

OAS Item Intercorrelations, Mason Form X Sample (N=85)*

		Items							
		1	2	3	4	5	6	7	8
1.	R-S	(39)	30	42	21	26	20	40	30
2.	I-S		(51)	27	29	16	17	29	53
3.	R-S			(60)	42	49	27	55	44
4.	I-S				(42)	36	26	37	38
5.	R-L					(50)	27	50	37
6.	I-L						(25)	24	30
7.	R-L							(57)	35
8.	I-L								(56)

*Decimal points omitted. All coefficients are positive and are statistically "significant" at or beyond the .05 level (one-tailed test). Figures in parentheses are the estimated communalities. For abbreviations see Table 12.

Table 14

OAS Item Intercorrelations, Mason Form Y Sample (N=85)*

Item	Quartimax			Principal Axis				
	1	2	3	4	5	6	7	8
1. R-S	(.43)	.30	.26	.35	.43	.23	.26	.22
2. I-S	.55	(.38)	.26	.36	.32	.27	.35	.26
3. R-S	.67	.62	(.26)	.29	.22	.14	.19	.20
4. I-S	.66	.44	.07	(.36)	.35	.25	.28	.20
5. R-L	.65	.27	.21	.64	(.46)	.28	.34	.27
6. I-L	.64	.05	.25	.63	.21	(.25)	.26	.25
7. R-L	.63	.23	.01	.62	.24	.03	(.35)	.33
8. I-L	.65	.23	.22	.65	.21	.07	.18	(.31)

*Decimal points omitted. All coefficients are positive and are statistically "significant" at or beyond the .05 level (one-tailed test). Figures in parentheses are the estimated communalities. For abbreviations see Table 12.

*Decimal points omitted.

The loadings on the quartimax rotations are used to interpret the factors. All eight OAS items have moderately high loadings on the first rotated factor of each matrix. This factor accounts for 75, 65, and 83 per cent of the variance in the respective matrices. It has high or moderate positive loadings on all items. The other two factors do not exhibit any systematic pattern in any of the matrices. Neither do they account for a high proportion of the variance in any matrix. Evidently, the OAS measures one major factor. Since LCA is the factor the test is designed to measure, it seems reasonable to conclude that the first factor is high vs. low LCA. The next two factors are apparently uninterpretable, and we

Table 15

QAS Factor Matrix, Lenawee Sample (N=441)*

Item	Quartimax			Principal Axes			h ²
	I	II	III	I	II	III	
1. R-S	50	02	40	51	-04	38	41
2. I-S	55	-33	-08	55	-29	-16	42
3. R-S	67	02	24	68	00	21	51
4. I-S	66	-14	07	67	-14	01	47
5. R-L	65	27	-11	64	31	-08	50
6. I-L	64	05	-25	63	11	-26	48
7. R-L	63	23	01	62	24	03	45
8. I-L	65	-23	-02	65	-21	-09	48
Per cent total variance:	75	8	7	75	8	7	

*Decimal points omitted.

The loadings on the quartimax rotations are used to interpret the factors. All eight QAS items have moderately high loadings on the first rotated factor of each matrix. This factor accounts for 75, 65, and 83 per cent of the variance in the respective matrices. It has high or moderate positive loadings on all items. The other two factors do not exhibit any systematic pattern in any of the matrices. Neither do they account for a high proportion of the variance in any matrix. Evidently, the QAS measures one major factor. Since LOA is the factor the test is designed to measure, it seems reasonable to conclude that the first factor is high vs. low LOA. The next two factors are apparently uninterpretable, and we

shall not attempt to identify them at this time. In general, it is tentatively concluded that the OAS is mostly a measure of general LOA, but it also contains a small amount of variance due to two unidentifiable factors. (This tentative conclusion will be slightly modified in the next section.)

Table 16

OAS Factor Matrix, Mason Form X Sample (N=85)*

Items	Quartimax			Principal Axes			h ²
	I	II	III	I	II	III	
1. R-S	49	18	33	52	-00	-33	38
2. I-S	32	65	09	52	-50	-08	53
3. R-S	76	08	05	74	19	-06	58
4. I-S	53	20	-24	57	00	23	38
5. R-L	68	-06	-15	62	29	14	49
6. I-L	38	14	-16	41	00	16	19
7. R-L	74	02	14	70	23	-15	56
8. I-L	51	55	-12	67	-34	12	58
Per cent total variance:	65	20	6	72	13	6	

*Decimals omitted.

Table 17

OAS Factor Matrix, Mason Form Y Sample (N=85)*

Items	Quartimax			Principal Axes			h ²
	I	II	III	I	II	III	
1. R-S	62	-22	-06	59	27	-12	43
2. I-S	56	14	18	58	-06	15	37
3. R-S	42	-04	28	42	11	25	26
4. I-S	57	-07	18	57	14	13	36
5. R-L	65	-06	-18	63	11	-23	46
6. I-L	44	18	-05	45	-14	-07	23
7. R-L	53	28	-01	55	-22	-03	36
8. I-L	44	32	-02	47	-27	-02	29
Per cent total variance:	83	10	7	84	10	6	

2. Inter-instrument technique. As was noted earlier in the chapter, there is good reason to believe that the free-response North-Hatt LOA instrument used in the Jefferson County, Wisconsin study and, with slight modifications, in the Lenawee County study is more nearly valid than most LOA instruments. This is based on two findings. First, in Jefferson County the scores on this instrument were found to be positively correlated with level of educational or occupational achievement seven years after the original measurement was taken. (See Chapter IV). Second, the two similar forms of that instrument administered in both counties are highly correlated (as compared to other LOA instruments) with variables non-LOA/hypothesized to be related to LOA.⁸ Also, this free-response instrument

⁸These findings may be inferred from Chapter IV.

was found to be moderately highly correlated with the OAS, as noted above in the first test of the OAS's validity. A knowledge of the degree of factorial similarity of this instrument and the OAS will aid in interpreting the validity of the OAS. This will require an inter-instrument technique of factor analysis. This analysis requires three steps: (1) a factor-analysis of the items comprising the OAS, (2) a factor-analysis of the items comprising the North-Hatt free-response instrument, and (3) a factor-analysis of all items of both. The first, already presented, shows the factorial purity of the OAS. It is heavily, but not exclusively, saturated with one factor, assumed to be LOA. The other analyses will be reported in the following paragraphs. If the North-Hatt instrument is found to be uni-factorial and if both together are uni-factorial, it may be concluded that both measure essentially the same factors. If the North-Hatt instrument is uni-factorial but the two together have more factors, then an inspection of the factors and their loadings should indicate, roughly, the degree and nature of factorial similarity or dissimilarity of the two instruments.

The correlation among all items of both tests is presented in Table 18. The data are based on the useable Lenawee sample size of 365. Both the North-Hatt factor-analysis and the combined North-Hatt and OAS factor-analysis are based on correlation coefficients in the table. Communalities for the analyses are estimated by using the highest correlations in a column or row. Inspection shows that the five North-Hatt items are more highly correlated with each other than they are with the OAS items or than the OAS items are with each other. This suggests that the two instruments have a related, but not identical, factor structure. But we shall return to this later.

Table 18

Intercorrelations of Responses to the North-Hatt Free-Response Instrument (X_1 - X_5) and the OAS (X_6 - X_{13})*
(N=365)

Variables:	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}
<u>North-Hatt</u>													
X_1 Highest	(72)	43	62	72	67	26	40	37	39	37	42	39	35
X_2 Lowest		(55)	55	46	46	34	19	34	37	35	30	34	27
X_3 Plan			(75)	73	75	35	34	36	42	35	37	36	31
X_4 Free				(82)	82	30	39	34	38	28	36	34	33
X_5 Mature					(82)	31	36	35	44	30	36	33	33
<u>OAS</u>													
X_6 R-S						(37)	20	37	36	22	25	31	27
X_7 I-S							(41)	38	36	31	35	29	41
X_8 R-S								(45)	43	44	32	44	45
X_9 I-S									(50)	44	41	34	50
X_{10} R-L										(46)	46	43	34
X_{11} I-L											(46)	38	36
X_{12} R-L												(44)	41
X_{13} I-L													(50)

*Decimal points omitted. All coefficients are positive and significant at or beyond the .01 level (one-tailed test). Communalities, using as an estimate the highest correlation of a variable to another variable, are in parentheses.

The factor analysis of the North-Hatt free-response instrument is presented in Table 19. The quartimax rotations⁹ clearly show the existence of one general factor, which we assume to be high vs. low LOA. It accounts for 88 per cent of the total variance among the five items, and it has high loadings on all items. A second factor has its highest loading on X₂, the North-Hatt

Table 19

North-Hatt Free-Response LOA Instrument Factor Matrix*

Lenawee Sample (N=365)

Variable:	Quartimax Loadings			Principal Axes Loadings			h ²
	I	II	III	I	II	III	
X ₁ : Highest	79	-01	31	79	14	-27	72
X ₂ : Lowest	55	49	00	60	-43	-07	55
X ₃ : Plan	84	18	-12	85	-13	12	75
X ₄ : Free	90	-08	03	89	16	02	82
X ₅ : Mature	90	-08	-11	88	13	16	82
Per cent total variance	88	8	3	89	7	3	

*Decimal points omitted.

⁹In Part II, Report V, we present the results of a factor analysis of this part of the matrix, using a different rotation technique. Its results are similar but not identical to those of the present analysis.

rating of the lowest choice, and inconsequential loadings on all other items. It accounts for eight percent of the total matrix variance. It is interpreted as high vs. low realistic LOA. (See Report V of Part II for a more complete discussion of this analysis.) The third factor is uninterpretable and accounts for only three per cent of the total variance. It is concluded that the North-Hatt free-response instrument is essentially a single-factor instrument. This is tentatively identified as high vs. low LOA.

Apparently both the OAS and the North-Hatt free response instrument are each measures of one factor. Whether that factor is LOA or something else can only--at this point--be inferred from the item content. Without further information, it might be concluded that both are saturated almost exclusively with LOA, and therefore that they are both equally valid measures of LOA. But, why then, is their correlation only $r = +.62$? Suggestions for answering this question follow from the study of the inter-technique factor-analytic validity to follow.

Table 20 presents the results of the factor analysis of the 13 x 13 correlation matrix composing Table 18. Three orthogonal factors account for 88 per cent of the total variance in this matrix. But unlike previous matrices, after quartimax rotation, there are two substantial factors in the matrix--Factor I, accounting for 57 per cent of the total variance, and Factor II, accounting for 25 per cent of the total variance. Clearly, Factor I may be interpreted as a high vs. low LOA factor. All items have positive loadings on it. The lowest of these is .35 (X_6 and X_{13}). The North-Hatt free-response items (X_1 - X_5) have the highest loadings on the factor, both before and after rotation. Especially after rotation, these loadings are strikingly high. The OAS items (X_6 - X_{13}) all have moderately high loadings on Factor I, but no OAS item has as high a loading as even the lowest North-Hatt item.

Table 20

North-Hatt Free-Response Instrument (X_1 - X_5 and OAS (X_6 - X_{13})

Inter-Technique Factor Matrix*

Lenawee Sample (N=365)

	Quartimax Loadings			Principal Axes Loadings			h ²
	I	II	III	I	II	III	
<u>North-Hatt</u>							
X ₁ : Highest	79	16	-13	76	-22	17	66
X ₂ : Lowest	55	20	42	60	-07	-39	52
X ₃ : Plan	84	07	18	78	-32	-14	73
X ₄ : Free	90	-01	-07	79	-43	11	82
X ₅ : Mature	89	01	-02	79	-41	06	80
<u>OAS</u>							
X ₆ : R-S	35	30	30	46	12	-26	30
X ₇ : I-S	41	40	-26	53	16	30	39
X ₈ : R-S	38	54	09	59	31	-05	45
X ₉ : I-S	44	52	06	63	25	-02	46
X ₁₀ : R-L	35	54	07	56	32	-03	42
X ₁₁ : I-L	41	46	-06	57	21	10	38
X ₁₂ : R-L	38	49	11	57	26	-07	40
X ₁₃ : I-L	35	57	-10	57	34	15	46
Per cent total variance	57	25	06	69	13	05	

*Decimal points omitted.

Apparently, the LOA factor is somewhat more clearly measured by the North-Hatt instrument. Weightings based on the first principal axes will be more highly correlated with total unweighted scores of either instrument than will weightings based on the rotated factors. Inasmuch as the OAS principal axes loadings are higher and the North-Hatt principal-axes loadings are lower than those of either one on the factor after rotation, and inasmuch as the OAS's total score is based on the greater number of items, it follows that the OAS is probably about as effective a measure of the factor as is the North-Hatt instrument.

Factor II makes a clear distinction between the two instruments. The rotated matrix shows moderately high loadings on all OAS items (X_6 - X_{13}), and quite low loadings on all North-Hatt items (X_1 - X_5). The same pattern is present in the unrotated matrix, where all OAS items have moderately low positive loadings and all North-Hatt items have moderately high to quite low negative loadings. Factor II may be identified then as a specific technique factor. Structurally, these instruments are similar in that they are both multiple-item and both based quite directly on the occupational prestige hierarchy. They differ in that one is free-response, while the other is structured response. They also differ in that one is balanced and complete: it systematically measures the several combinations of expression-levels and time-dimension periods. The other is unbalanced and incomplete: it haphazardly measures each expression-level and time-dimension period and it is somewhat weighted to the short-range. They may also differ in ways which are more subtle and which are unknown at this time. There is no way of deciding exactly which of the evident or subtle differences produces Factor II.

Factor III is evidently the same as Factor II from Table 19, slightly modified by the addition of the OAS items. It has moderately low positive loadings on the lowest (X_2), the plan (X_3), one OAS realistic short-range question (X_6),

and a moderately low negative loading on an OAS idealistic short-range question (X_7). Its meaning is not clear enough and its contribution to the correlation matrix variance is not large enough to warrant naming it.

It may be concluded that the inter-technique factorial validity analysis shows that (1) Both instruments are heavily saturated with the same factor. (2) This factor is LOA. (3) The North-Hatt instrument is probably the clearest measure of the LOA factor. (4) But the OAS is also a relatively valid measure of LOA. (5) There is a specific-technique factor which sharply differentiates the two instruments, although there is no apparent way of knowing at present exactly what produces this difference.

Summary of Internal Characteristics of the Occupational Aspiration Levels

By internal characteristics we refer to the patterns among persons' responses to the OAS. Descriptions of response patterning include norms, reliability, factor-analytic structure, and non-factor-analytic structure or profile. They also include the relationship of the OAS to other LOA instruments, specifically the concurrent validity coefficient and the inter-technique factorial validity. The term "internal characteristics" is thus juxtaposed to the term design, the subject of the previous chapter. The latter is concerned with the organization of the OAS as it was derived from LOA theory and as it is presented to prospective respondents in terms of physical format and administrative instructions, while the former is concerned with patterns among the respondents' answers.

Data for these analyses were collected from all seventeen-year-old boys in school in Lenawee County, Michigan, in the spring of 1957, and from all junior and senior boys in school in Mason, Michigan, in the winter of 1958-59. The OAS

was designed as an instrument to be administered to adolescent boys before they have taken permanent jobs or entered college. For this reason, girls of all ages and boys of this age who were no longer in school were excluded. For various reasons, data on some of those tested are incomplete. For this reason, the sizes of samples vary from analysis to analysis. In our judgment the analyses are not at all adversely affected by this. This is because the results are, including those of the next chapter, consistent with each other and with LOA theory.

In brief, this chapter has shown several facts about responses to the OAS. (1) Its attrition rate due to non-responses, incomplete responses, and unusable responses, is less than one per cent. (2) It has reliability coefficients which are high enough to warrant its use in research and counseling.¹⁰ Its equivalent-halves reliability has been quite well established for three different administrations. It is in the vicinity of .80. Its stability is less well established. On the one ten-week interval test of it which has been made, it appeared to be fairly stable ($r_g = .77$). This test used equivalent forms, rather than identical forms, so it may be that for the ten-week period its stability is underestimated. On the other hand, its stability over longer time periods may well be lower than the ten-week figure. (3) The OAS seems to be a valid measure of LOA. Here the data are necessarily indirect. They show that the non-factorial or profile structure of the OAS is consistent with LOA theory. Realistic expression level stimulus questions yield lower mean scores than do mean idealistic expression level stimulus questions, and short-range time-dimension period stimulus questions tend to yield lower mean scores than do mean long-range time-dimension period stimulus questions. The data regarding time-dimension periods are not completely

¹⁰ While this is true, it should be emphasized that the OAS should not be used in counseling until it has been evaluated specifically for that purpose.

consistent. (4) The only estimate available for a coefficient of concurrent validity is a moderate value of $+.62$, based on the OAS's correlation with a North-Hatt technique. Whether this is evidence for or against the OAS as a measure of LOA is really a moot question: while the North-Hatt multiple-item free-response technique is probably the best previous LOA instrument, it has many shortcomings--not the least of which is the fact that its uncodable responses (resulting in an attribution rate of 17 to 25 per cent) probably force the exclusion of a large proportion of the low aspirers. (5) Factor analysis shows the OAS to be essentially a one-factor test, for one factor accounts for the great proportion of its total inter-item variance. (6) An inter-technique factorial validity test shows the main OAS factor to be essentially the same as the main North-Hatt technique factors. This is certainly LOA. But there is a factor which distinguishes between the two techniques. The exact sources of this factor cannot be located with present data. The two techniques differ in several ways, any one or any combination of which might produce the factorial difference. It seems possible, however, that whatever reduces the validity coefficient--see (4) above--also is responsible for the difference in factor structure.

In general, it is concluded that OAS is a reliable, stable, and at least approximately valid instrument. The best evidence for the OAS's validity must, however, wait until the first subjects to take it have stabilized themselves in their life's occupations. The validity of the OAS will be finally established only if the combined effects of LOA as measured by the OAS and of variables impeding and facilitating the expression of LOA in behavior are found to accurately account for the variance in actual prestige levels of occupational achievement.

But there are other indirect ways of approaching the assessment of validity. One of these was presented in Chapter IV. In that chapter the relational fertility of the concept of LOA was tested by constructing hypotheses about the correlation of LOA to non-LOA variables. These hypotheses were based on general attitude theory and on general level of aspiration theory. In spite of the many deficiencies existing in LOA instruments it was found that they behave lawfully. The same logic may be applied to the OAS as one measure of LOA. The relation of OAS scores to non-LOA variables is the subject of the next chapter.

The same type of argument may be advanced with the OAS. If the OAS is a valid LOA instrument, then it will follow the same "lawful" behavior in regard to the same hypotheses--as will other LOA instruments. If it is a non-LOA instrument it will behave very differently in regard to the same "lawful" behavior of the other instruments. "Following were early in 1954 two things: (1) Under comparable conditions, the OAS will be highly correlated with non-LOA variables classifiable under the seven hypotheses then in the most valid previous instrument. (2) Under comparable conditions, the OAS will be statistically "significantly" correlated with non-LOA variables classifiable under the seven hypotheses then in the most valid of existing instruments. The corresponding argument cannot, and will not, be made for the hypothesis of no relationship, because Chapter IV has already shown that LOA evidently follows "laws" which are not stated in any of the seven hypotheses of relationship.

Chapter VII

CORRELATES OF THE OCCUPATIONAL ASPIRATION SCALE

The general objective of this chapter is to report findings on the correlation of the OAS with non-LOA variables. But this will be done in a way permitting this information to contribute to knowledge concerning the validity of the OAS. As noted in Chapter IV, the demonstration of lawful behavior is a method of testing for validity. In that chapter the argument was focused on the concept of LOA. It was shown that seven hypotheses based on attitude and level of aspiration theory, of which LOA is a special case, account for a substantial proportion of the positive statistically "significant" correlations of any measure of LOA with other variables, and that most of the variables not classifiable under one of the seven hypotheses are not correlated with LOA.

The same type of argument may be utilized with the OAS. If the OAS is a valid LOA instrument, then it will follow the same "laws"--behave in accord with the same hypotheses--as will other LOA instruments. If it is a more valid instrument it will behave more nearly in accord with the same "laws" than do the most valid of the other instruments. "Behaving more nearly in accord" means two things: (1) Under comparable conditions, the OAS will be more highly correlated with non-LOA variables classifiable under the seven hypotheses than is the most valid previous instrument. (2) Under comparable conditions, the OAS will be statistically "significantly" correlated with more non-LOA variables classifiable under the seven hypotheses than will the most valid of existing instruments. The corresponding argument cannot, and will not, be made for the hypothesis of no relationship, because Chapter IV has already shown that LOA evidently follows "laws" which are not stated in any of the seven hypotheses of relationship.

Except for this fact, it would be expected that the more valid the LOA instrument, the less frequently it would be correlated with non-LOA variables not theoretically related to LOA. As it is, there is good reason to suspect that the hypotheses are incomplete; if LOA follows unknown "laws" then the more valid the LOA instrument, the more frequently it will be correlated with the non-LOA variables.

Given the somewhat indeterminate state of LOA knowledge, this chapter will specify the hypotheses from Chapter IV for which data are available. The behavior of OAS with respect to these will be compared with the behavior of the most valid previous instrument with respect to the same variables on the same sample. Two types of comparisons will be made: (1) magnitude of correlation of each with non-LOA variables, and (2) number of non-LOA variables statistically "significantly" related to each in the expected direction. Conclusions will then be drawn concerning the comparative validity of the OAS. This will be followed by a presentation of non-LOA variables for which comparative data do not exist. They will be presented along with the hypotheses to which, in the writers' opinion, they are most appropriate. This will be followed by general conclusions concerning the absolute and relative relational fertility of the OAS as a measure of LOA. Implications for validity will then be discussed.

The Most Valid Previous LOA Instrument

The question of which is the most valid previous LOA instrument must be answered. Here, too, the data are not easy to evaluate. The best evidence comes from Chapters III and IV. On non-empirical grounds the most valid instrument is the one which comes closest to including all of the aspects of level of aspiration theory. The OL scale and the LI scale are quite inadequate in this respect, being only implicitly and indirectly related to the level of aspiration

model and to the occupational hierarchy. All single-stimulus techniques such as Stubbins' and others, are inadequate in that they are based only on parts of the level of aspiration model. This leaves the North-Hatt free-response instrument used in Jefferson and Lenawee Counties as the only previous instrument which meets almost all theoretical requirements of a LOA measure.

The empirical ground, however, is less solid. Most of the data are not strictly comparable. Moreover, there are none of the single stimulus questions appearing in enough tests to warrant inclusion in this comparison. Only the OL, the LI and the North-Hatt techniques have been explored fully enough for this. With these qualifications, the study of the tests in Chapter IV shows that the OL scale has the highest proportion of correlations which are not in accord with the first seven hypotheses. The Lee-Thorpe has the second highest proportion of unpredictable correlations and the North-Hatt free-response technique has the fewest. In addition, data are available to compare the North-Hatt and the LI scale on the Jefferson County sample. When this is done, it is found that the correlation of the North-Hatt with non-LOA variables is higher than that of the LI many times more frequently than the LI correlation is higher than that of the North-Hatt technique. It seems clear therefore that of the three instruments having extensive enough use to warrant comparison, the North-Hatt free-response instrument is the most valid. Thus, both the theoretical and empirical evidence justifies and supports the conclusion that the North-Hatt free-response is the most appropriate with which to compare the OAS in terms of relational fertility.

Data and Method

Data for the comparative analysis are taken from the Lenawee County study. Due to incomplete responses to the free-response questions, the North-Hatt sample consists of 365 boys. The OAS data are based on a larger sample of 433 boys for whom other data are complete. The hypotheses to which the data pertain are written out ^{the} in order of their appearance. Hypotheses to which no data are appropriate are not repeated here. All non-LOA variables presented in the first part of this chapter, as well as their correlations with the North-Hatt instrument, have been presented previously in Chapter IV. Non-LOA variables appearing for the first time in this chapter will be presented after the comparative analysis. As in Chapter IV, the .05 level (two-tailed test) will be used as criteria in the TANH.

Comparative Analysis

This section presents OAS correlates for which comparable North-Hatt data are available. The correlations are presented following the restatement of the hypothesis to which they refer. (Hypotheses 1 and 7 are omitted because no OAS data pertain to them.) Special classes of variables testing the hypotheses as well as their explanations are stated in Chapter IV and will not be repeated here, although they will be presented in the same order as in that chapter so as to aid readers who may wish to refer to them.

Hypothesis 2. A positive correlation will be found between LOA and any measure of success in school. Data concerning this hypothesis follow. (1) Grade point averages in school - North-Hatt: +.53; OAS: +.50. (2) Number of years of college training desired - North-Hatt: +.67; OAS: +.64.

Hypothesis 3. A positive correlation will be found between the person's LOA and the success orientations of the groups to which he belongs. The relevant data are as follows: (3) Sons' estimates of their parents' levels of occupational aspiration for them - North-Hatt: +.29; OAS: +.22. (4) Sons' estimates of their parents' levels of educational aspiration for them - North-Hatt: +.44; OAS: +.44.

Hypothesis 4. A positive correlation will be found between LOA and the degree to which the social situation of the person tends to produce success in occupationally related areas of behavior. These data follow: (5) Modified Sewell Socio-economic Status Scale Scores - North-Hatt: +.38; OAS: +.38. (6) Father's educational status - North-Hatt: +.27; OAS: +.29. (7) Mother's educational status - North-Hatt: +.25; OAS: +.30.

Hypothesis 5. A positive correlation will be found between LOA and any personality orientation tending to produce the experience of success in occupationally related areas of behavior. The data follow: (8) Intelligence raw scores (Cattell's Test of G-Culture Free, 1950) - North-Hatt: +.46; OAS: +.45 (9) Personality adjustment (California Test of Personality, 19) - North-Hatt: +.30; OAS: +.28. (10) 16 P-F Test (Cattell, 1950) Factor C, emotional stability - North-Hatt: +.19; OAS: +.19. (11) 16 P-F Test Factor F, surgency - North-Hatt: not related; OAS: +.11. (12) 16 P-F Test Factor O, lack of anxious insecurity - North-Hatt: not related; OAS: not related. (13) 16 P-F Test Factor Q_4 , lack of nervous tension - North-Hatt: not related; OAS: +.11. (14) 16 P-F Test Factor A, cyclothymia vs. schizothymia - North-Hatt: not related; OAS: +.12. (15) 16 P-F Test Factor G, super ego strength - North-Hatt: +.23; OAS: +.26. (16) 16 P-F Test Factor N, sophistication - North-Hatt: +.21; OAS: +.16. (17) 16 P-F Test Factor Q_3 , will control and character stability - North-Hatt: +.13; OAS: +.16. (18) MSU Work-Beliefs Check-List B-VA 6, willingness to defer justification - North-Hatt: +.28; OAS: +.21.

Hypothesis 6. A positive correlation will be found between LOA and any personality orientation expressing the willingness to act independently. The data relevant to this hypothesis follow: (19) 16 P-F Test Factor E, dominance - North-Hatt: $+.11$; OAS: not related. (20) 16 P-F Test Factor H, adventurous autonomic resilience - North-Hatt: $+.22$; OAS: $+.24$. (21) 16 P-F Test Factor Q_1 , radicalism - North-Hatt: $+.13$; OAS: not related. (22) 16 P-F Test Q_2 , independent self-sufficiency - North-Hatt: $+.14$; OAS: $+.18$.

The most striking fact about these findings is the similarity in the degrees to which each LOA instrument is correlated with non-LOA variables. The correlation coefficients are almost exactly the same. Where minute differences in the magnitude of correlation appear, they favor the OAS. There are 16 pairs of coefficients in which both members are statistically "significantly" related to a non-LOA variable. In ten of these the OAS has the slightly greater correlation, and in six the North-Hatt technique has the slightly greater correlation. There are five instances in which one or the other LOA instrument was not found to be related to non-LOA variables. In three of these the OAS was found to be related to the non-LOA variable, and in two the North-Hatt was found to be related. In only one instance were both found to be unrelated to a non-LOA variable. (For both instruments, infinity rather than the actual sample size was used to estimate the degrees of freedom due to observations. Hence the apparent differences in the results of the TANH cannot be attributed to the differences in the size of samples.)

The clear conclusion to be drawn is that one instrument has about the same degree of relational fertility as the other. The OAS and the North-Hatt free-response LOA instrument have almost exactly the same indirect validity as assessed by their ability to detect relationships with non-LOA variables where the theory and the bulk of the evidence indicate that relationships exist. Available theory

and data indicate that the North-Hatt free-response instrument is probably the most nearly valid LOA instrument known to be in existence before the OAS. It may be concluded that the OAS has as high a degree of validity as assessed by relational fertility tests as does the most nearly valid previous instrument.

Other Non-LOA Correlates of the OAS

In accord with the procedure stated in the beginning, this section will present other correlates of the OAS according to the hypothesis the writers believe to be most appropriate. The purposes of this are to add to the relational fertility data already presented, and to help catalogue the variables known to be related to LOA as measured by the OAS.

Intra-class correlation data of the OAS scores of boys who choose each other as best friends are available from the Lenawee and Mason studies. (See Reports III and VI of Part II of this monograph). These data are appropriate to Hypothesis 3, which holds that a positive correlation will be found between the person's LOA and the success orientations of the groups to which he belongs. The group under study here is the peer clique. The Lenawee data are complex and an exact R coefficient is not available for them. The findings, then, are: (1) Lenawee: $R = \text{approximately } +.30$; (2) Mason: $R = +.33$.

B-VA's 1 and 2 of the MSU Work Beliefs Check-List are appropriate to Hypothesis 5, concerning the positive correlation of LOA to personality orientations producing the experience of success in occupationally related areas of behavior. B-VA 1 measures the degree to which the person is expressively vs. instrumentally oriented toward work; whether he viewed work as an end or simply as a means for making money. It is called "expressive versus instrumental orientation to work." B-VA 2 measures the degree to which the person has a favorable attitude toward

having time organized. It is called "evaluation of structured time" but it might be equally well called "preference for punctuality." The respective correlations with the OAS follow: (3) B-VA 1: not related; (4) B-VA 2: $r = +.11$.

B-VA's 3, 4, and 5 are believed to be appropriate to Hypothesis 6, concerning LOA and personality orientations expressing the willingness to act independently. B-VA 3, "positive versus negative evaluation of physical mobility," measures the degree to which the person is psychologically prepared to move as new occupational alternatives appear. B-VA 4, "positive versus negative evaluation of change," measures the degree to which the person likes new experiences and dislikes traditional ways of doing things. B-VA 5, "belief in internal versus external determination of events," measures the degree to which the person believes his fate is under his own control rather than under the control of other beings or forces. The respective correlations follow: (5) B-VA 3: $r = +.20$; (6) B-VA 4: not related; (6) B-VA 5: $r = +.28$.

De Charms' et al. (1955) y-achievement measures the degree to which a person believes himself to be achievement-oriented. As such it falls under Hypothesis 7, which relates LOA and self-conception concerning success or achievement orientation. Data measuring its correlation with the OAS were collected in the Mason study. Its correlation with the OAS follows: (7) y-achievement: $r = +.25$.

Several other variables, not clearly belonging to any of the seven substantive hypotheses, have been tested against the OAS. These and their respective correlations with the OAS follow: (8) The proportion of courses taken by Lenawee boys in non-agricultural courses: $r = +.30$. (9) A measure of the degree of certainty the youth has that he will actually enter a particular occupation: not related. (10) 16 P-F Test Factor I, emotional sensitivity: not related.

(11) 16 P-F Test Factor 2, paranoid schizothymia vs. trustful altruism: not related. (12) 16 P-F Test Factor M, hysteric unconcern vs. practical concernedness: not related. (13) Concern over social status (a multiple-item index): not related.

Summary

This chapter has presented the correlations of the OAS with non-LOA variables. This was done in such a way as to contribute to knowledge the relational fertility of the OAS, and thus to make an indirect test of its validity. The part of the chapter comparing the OAS with the North-Hatt free-response instrument presents the most powerful argument. In it we find that the OAS is about as valid as is the most valid previous LOA instrument. The last section simply lists the correlation of the OAS to other variables.

The main purpose of this monograph is to present the results of empirical tests of the adequacy of the OAS as a measure of LOA.

Accomplishing this purpose, however, presupposes a wealth of detailed information on LOA. Actually, a certain amount of such information exists. But it has never been written up as a whole. For this reason, three chapters were devoted to the LOA concept. Following the general introduction in Chapter I, Chapter II presented a description of the LOA concept. In that chapter we tried to show that LOA is a special instance of both the concept of level of aspiration and the concept of attitude. We also traced its relationship to a number of other concepts in the behavioral sciences, and elaborated the LOA concept itself in some detail. This discussion was followed by Chapter III which presented a conceptual evaluation of most of the various LOA measures which have been used in research. This analysis required specifying the measurement implications of LOA theory, as well as some of the practical requirements of all instruments

CHAPTER VIII

CONCLUSION

Summary of Theory and Techniques of LOA

In Chapter I we noted that the purpose of this monograph is to present and evaluate an instrument designed to measure differential level of occupational aspiration or LOA. The concept LOA has had considerable use in recent years, mostly because it is believed to be a psychological orientation to enter the occupational world at one level rather than another.

So far as the writers have been able to discover there has been no completely ^{differential} adequate measure of/LOA previous to the development of the Occupational Aspiration Scale (OAS). The main purpose of this monograph is to present the results of empirical tests of the adequacy of the OAS as a measure of LOA.

Accomplishing this purpose, however, presupposes a wealth of detailed information on LOA. Actually, a certain amount of such information exists. But it has never been written up as a whole. For this reason, three chapters were devoted to the LOA concept. Following the general introduction in Chapter I, Chapter II presented a description of the LOA concept. In that chapter we tried to show that LOA is a special instance of both the concept of level of aspiration and the concept of attitude. We also traced its relationship to a number of other concepts in the behavioral sciences, and elaborated the LOA concept itself in some detail. This discussion was followed by Chapter III which presented a conceptual evaluation of most of the various LOA measures which have been used in research. This analysis required specifying the measurement implications of LOA theory, as well as some of the practical requirements of all instruments

purporting to measuring psychological constructs. No previous LOA measuring technique was found which does justice to the theory; neither do any meet all of the practical requirements of a psychological instrument. Moreover, the techniques which most nearly meet the theoretical requirements are the least practicable.

Sciences are not built on dataless theory, however. LOA has never before been subjected to an exhaustive study of its correlates. This was done in Chapter IV by drawing seven hypotheses from theory of aspiration and of attitude, and then classifying all variables under the hypotheses known to have been tested for correlation with LOA. Many variables could not be classed as appropriate to any of these hypotheses, and were therefore classed under an hypothesis predicting no correlation with LOA. The over-all result was that even the inadequate available instruments show the LOA concept to behave predictably. For when we hypothesize that an LOA measure will be related to a non-LOA variable we are correct about four-fifths of the time, and when we hypothesize that an LOA measure will not be related to a non-LOA variable we are correct about seven-tenths of the time. This seems to be quite strong evidence that LOA's theoretical promise is fulfilled in its empirical behavior.

This finding justifies the detailed analysis of the OAS, presented in Chapters V, VI, and VII. In brief, we find that the OAS has an internal structure which does justice to the various elements of the LOA concept, and it has a design which makes it a practicable instrument for research and for counseling, but we must note again that it should not be used for counseling until it has been evaluated specifically for this purpose. It should be emphasized that the OAS is a measure of differential, not absolute LOA. The empirical findings on the OAS are summarized below.

Summary of OAS Data

The main findings of the analysis of responses to the OAS are itemized immediately below. These findings are summarized from Chapters V, VI and VII.

It has been evaluated for measuring LOA's of older high school boys. While it may be appropriate for school girls and for school boys of other ages, this has not yet been demonstrated.

Total administration time in group situations (including time for distributing the forms, explaining how to fill it out, answering student's questions, and filling out the form) is usually not more than one-half hour.

Scoring time is about one to two minutes per form, and the form may be scored by any literate person.

The rate of non-responses and unusable responses is less than one per cent.

The mean score is approximately 37 points.

The standard deviation of the scores is approximately 11.5 - 13.0 points.

The shape of the distribution of raw scores is approximately normal.

The split-half reliability is about $r = .80$, when corrected for attenuation.

The test-retest reliability coefficient, measured on equivalent forms administered 10 weeks apart, is $r = .77$.

The concurrent validity coefficient, measured against perhaps the best previous LOA instrument, is $r = +.62$.

Its profile structure is as predicted by theory. Realistic and short-range levels tend to be lower than idealistic and long-range levels. (Some of the evidence here is contrary to above pattern.)

Its internal factor-analytic structure consists of three factors, only one of which accounts for a substantial proportion of the item intercorrelation. That is, it is essentially a one-factor form.

An inter-technique factor-analysis shows it to share a main factor with a free-response technique, but it is distinguished from the free-response technique by another substantial factor. The exact sources of the latter factor are unknown, but it is probably due to the differences in ways of eliciting LOA responses.

The relational fertility of the OAS agrees with that of all other LOA measures, in that it is correlated and uncorrelated with the same types of non-LOA variables.

In comparative relational fertility, the OAS agrees well with perhaps the best of previous LOA instruments, in that it has almost exactly the same degree of correlation with non-LOA variables as does the latter instrument.

Conclusion and Problems for Research

Conclusion. In general, we conclude that the OAS appears to be a practical, reliable, and evidently a valid instrument for measuring differential levels of occupational aspiration. It is probably the best available single combination of practicability, reliability and validity. Students find it easy to fill out and they do it quickly. It is also easy to score. All other instruments that are simple to administer and score are deficient in other respects. There are a few other reliable LOA instruments but these are of unknown or relatively low validity. The design of the two other instruments of high reliability, Strong's OL scale and the Lee-Thorpe LI scale, is only vaguely related to LOA theory, and the two are practically uncorrelated with each other. Only one LOA instrument, a multiple-item free-response technique, is known to have a degree of predictive validity. ^{This is the North-Hutt technique.} /The OAS is moderately highly correlated with it, and this instrument and the OAS have almost identical degrees of correlation with a number of non-LOA variables. But the free-response instrument is not practicable because it has a high non-response rate and is difficult to score.

Problems for Research. The most pressing unresolved problem of the OAS is that its predictive validity is unknown. We have used every indirect method of assessing validity we could discover, and it holds up well according to these. But its predictive validity must be established before it can be used with

absolute confidence. The most adequate tests of predictive validity require the re-study of subjects initially tested in high school after they have moved on to their life's occupations or have completed their college education. Less adequate, but nevertheless useful, tests of predictive validity may be made on the academic success of college freshmen and other groups for one of the hypothesized effects of LOA is performance in school. Such studies are now being conducted at Michigan State University.

The fakability of the OAS also needs to be tested. Also, research needs to be conducted to ^{determine} / the extent to which students actually do fake the form. Our guess is that very few do so, but we have no definite evidence of this. Moreover, we believe that an essentially unfakable form could be devised by correlating responses to questions having no LOA manifest content with responses to the OAS, under conditions where the initial respondents are highly motivated not to fake their answers. Such a system may be subject to other types of error, but it should be tried.

A third problem concerns the present response alternatives to the OAS. As we indicated in Chapter V, the response alternatives are presently unbalanced. This means that the average ranks of the alternatives contributing to the measurement of each combination of expression-levels and time-dimension periods are unequal. This inequality almost surely influences the profile structure of the responses. As it happens, this is not at all a serious difficulty, but future editions of the OAS should include balanced response alternatives.

A fourth problem, or set of problems, concerns the evaluation of the OAS for counseling purposes. To date, it has not been used to counsel students. But this is an important potential use for it. It is our belief that its most important use in counseling would be to discover the students whose class (or

other group) rank on LOA is quite dissimilar to their rank on intelligence or grades. Such people would be over-aspirers or under-aspirers. The over-aspirers might well need counseling to lower their LOA's, and the under-aspirers might need counseling to accomplish the opposite. We hope to begin research aimed at evaluation of the OAS for counselors in the near future.

The usefulness of the OAS for girls has yet to be demonstrated. It may not be appropriate for girls, but research should be conducted to see if this is true. Exploratory studies now being conducted at Michigan State University appear to show that girls respond to it in ways which, though differ from those of boys, are nevertheless meaningful. But OAS studies of girls need to be conducted much more systematically than has been done to date.

Additional reliability data should be collected. In particular, we need more long-range stability coefficients than are presently available.

Extensive data on norms for boys and girls of different ages also need to be compiled. These will help counselors interpret the meaning of the score for any particular individual. Research is presently underway to determine the influence of higher levels of LOA, as measured by the OAS, as a psychological force sustaining in the individual in school and predisposing him to do well in school. These studies are being conducted on junior high school children who may be potential drop-outs and on beginning college students at Michigan State University.

The OAS may be easily improved. We have already noted that an unfakable form could be constructed. A revision with balanced response alternatives should be put together, using the system noted on p. 84. At the same time, the problem of unwanted response sets (p. 84) could be overcome in the same revision. Finally, the split-half reliability of the OAS could be increased by doubling or tripling the number of its stimulus questions. This could be done simply by

repeating the various response alternatives while keeping both the stimulus questions and the response alternatives balanced.

There are other unsolved problems on the development and dynamics of LOA for which the OAS may be an important instrument. For one, we need to trace the development of LOA through time. For others, we need to investigate differences between those whose idealistic and realistic expression levels are distant as compared to those whose expression levels are close together; and those whose long-range time-dimension levels are no different from their short-range as compared to those whose time-dimension levels are much higher than their short-range.

Uses of the OAS. In these pages we have presented the Occupational Aspiration Scale. Only additional research can tell whether it can be used by counselors. But in our opinion, it is a quite satisfactory instrument for research on LOA. It is our hope that it will extend knowledge of the educational and occupational behavior of youth in America and perhaps elsewhere. A beginning has already been made in this direction: Reports I, II and III of Part II, use the OAS to help explain the educational and occupational achievement patterns of farm-reared boys. Perhaps it will bear fruit in other fields.

BIBLIOGRAPHY

- Alexander, Irving E., Lee B. Macht, and Bertram P. Karon (1959) The level-of-aspiration model applied to occupational preference, Human Relations, 12:163-170.
- Barnett, G. J., L. H. Stewart, and D. E. Super (1952) The occupational level scale as a measure of drive, Psychological Monographs, 66, No. 10.
- Becker, Howard S., and James W. Carper (1956) The development of identification with an occupation, American Journal of Sociology, 61:289-298.
- Caplow, T. (1954) The sociology of work, Minneapolis, University of Minnesota Press, Chapter 2.
- Cattell, R. B. (1952) Factor analysis, New York, Harper and Brothers.
- Cattell, R. B., and A. K. S. Cattell (1950) Test of G-culture free - scale 3A, Champaign, Illinois, Institute for Personality and Ability Testing.
- Cronbach, L. J., and P. E. Meehl (1955) Construct validity in psychological tests, Psychological Bulletin, 52:281-302.
- Darley, J. G., and T. Hagenah (1955) Vocational interest measurement, Minneapolis, University of Minnesota Press, pp. 116-118, 191-263.
- Davies, A. F. (1952) The prestige of occupations, British Journal of Sociology, 3:134-147.
- DeCharms, R., W. H. Morrison, W. Reitman, and D. C. McClelland (1955) Behavioral correlates of directly and indirectly measured achievement motivation. In Studies in motivation, edited by D. C. McClelland, New York, Appleton-Century-Crofts, Inc.
- Deutsch, M. (1954) Field theory in social psychology, in Handbook of social psychology (G. Lindzey, Editor), Cambridge, Addison-Wesley Publishing Company, Vol. I, pp. 208-209.
- Dynes, R. R., A. C. Clarke, and S. Dinitz (1956) Levels of occupational aspiration: some aspects of family experience as a variable, American Sociological Review, 21:212-215.
- Edwards, A. L. (1954) Statistical methods for the behavioral sciences, New York, Rinehart and Company, Inc.
- Edwards, A. L. (1957) Techniques of attitude scale construction, New York, Appleton-Century-Crofts, Inc.
- Foots, Nelson W. (1951) Identification as the basis for a theory of motivation, American Sociological Review, 16:14-21.
- Gardner, J. W. (1940) The use of the term "level of aspiration," Psychological Review, 47:59-68.
- Guttman, Louis (1958) An estimate of communalities that is imagewise consistent and structure-free, Research Report 20, Contract AF41 (657)-76, (May 22). -

- Hagood, M. J., and Daniel O. Price (1952) Statistics for sociologists, New York, Henry Holt and Company.
- Haller, A. O. (1957) Occupational aspiration scale, East Lansing, Michigan.
- Haller, A. O., and W. H. Sewell (1957) Farm residence and levels of educational and occupational aspiration, American Journal of Sociology, 62:407-411.
- Holloway, R. G., and Joel V. Berreman (1959) The educational and occupational aspirations and plans of negro and white male elementary school students, Pacific Sociological Review, 2:56-60.
- Inkeles, Alex, and Peter H. Rossi (1956) National comparisons of occupational prestige, American Journal of Sociology, 61:329-339.
- Inkeles, Alex (1959) Personality and social structure, in Sociology today, Robert K. Merton, Leonard Broom, and Leonard S. Cottrell, Jr. (editors), New York, Basic Books, Inc.
- Institute for Personality and Ability Testing (1950) The 16 personality-factor test, Form B, Champaign, Illinois.
- Irwin, F. W. (1951) Motivation, in Theoretical foundations of psychology, (H. Helson, Editor), Princeton, D. Van Nostrand Company, pp. 239-241.
- Kahl, J. A. (1957) The American class structure, New York, Rinehart, pp.53-90.
- Kish, Leslie (1959) Statistical problems in research design, American Sociological Review, 24:328-338.
- Lee, Edwin A., and Louis P. Thorpe (1956a) Manual-occupational interest inventory - advanced, Hollywood, California Test Bureau.
- Lee, Edwin A., and Louis P. Thorpe (1956b) Occupational interest inventory-advanced, Hollywood, California Test Bureau. (First Ed., 1943).
- Lewin, K., Tamara Dembo, L. Festinger, and Pauline S. Sears (1944) Level of aspiration, in Personality and the behavior disorders (J. McV. Hunt, Editor), New York, The Ronald Press Co., Vol. I, pp. 333-378.
- Lipset, S. M., and Reinhard Bendix (1959) Social mobility in industrial society, Berkeley and Los Angeles, University of California Press.
- Lurie, W. A. (1939) Estimating the level of vocational aspiration, Journal of Social Psychology, 10:467-473.
- McClelland, D. C., J. W. Atkinson, R. A. Clark, and E. L. Lowell (1953) The achievement motive, New York, Appleton-Century-Crofts, Inc.

- McClelland, D. C. (1958) Methods of measuring human motivation, in Motives in fantasy, action, and society (J. W. Atkinson, Editor), Princeton, Van Nostrand Company.
- Merton, R. K. (1957) Social theory and social structure, Glencoe, Illinois, Free Press, pp. 421 ff.
- Murry, H. A. (1938) Explorations in personality, New York, Oxford University Press.
- National Opinion Research Center (1947) Jobs and Occupation: a popular evaluation, Opinion News, 9:3-13.
- Neuhaus, J. O., and C. F. Wrigley (1954) The quartimax method: an analytic approach to orthogonal simple structure, British Journal of Statistical Psychology, 7:81-91.
- Peak, Helen (1955) Attitude and motivation, in Nebraska Symposium on Motivation-1955 (M. R. Jones, Editor), Lincoln, University of Nebraska Press, pp.149-189.
- Ramsey, Charles E., and Robert J. Smith (1960) Japanese and American perceptions of occupations, American Journal of Sociology, 65:475-482.
- Rao, C. R. (1955) Estimations and tests of significance in factor analysis, Psychometrika, 20:99-111.
- Rosen, B. C. (1959) Race, ethnicity, and the achievement syndrome, American Sociological Review, 24:47-60.
- Sewell, W. H. (1943) A short form of the farm family socio-economic status scale, Rural Sociology, 8:161-173.
- Sewell, William H., and A. O. Haller (1959) Factors in the relationship between social status and the personality adjustment of the child, American Sociological Review, 24:511-520.
- Sewell, W. H., A.O. Haller, and M. A. Straus (1957) Social status and educational and occupational aspiration, American Sociological Review, 22:67-73.
- Sherif, M. (1935) A study of some social factors in perception, Archives of Psychology, No. 187.
- Sherif, M., and Sherif, C. W., An outline of social psychology (1956), Revised edition, New York, Harper and Brothers.
- Stefflre, B. (1955) Vocational aspiration and level of interest scores on the Lee-Thorpe occupational interest inventory, Personnel and Guidance Journal, March: 385-388.
- Stephenson, Richard M. (1957) Mobility orientation and stratification of 1,000 ninth graders, American Sociological Review, 22:204-212.

- Strong, E. K., Jr. (1938) Vocational interest blank for women, California, Stanford University Press.
- Strong, E. K., Jr. (1946) Strong vocational interest blank for men - revised, Palo Alto, Consulting Psychologists Press, Inc.
- Strong, E. K., Jr. (1959) Manual for Strong vocational interest blanks for men and women, Palo Alto, Consulting Psychologists Press, Inc.
- Strong, E. K., Jr. (1946) Vocational interests 18 years after college, Minneapolis, University of Minnesota Press, pp. 127-136.
- Stubbins, J. (1950) The relationship between level of vocational aspiration and certain personal data, Genetic Psychology Monographs, 41:327-408.
- Super, D. E. (1957) The psychology of careers, New York, Harper and Brothers, pp. 1-51.
- Technical Recommendations for Psychological Tests and Diagnostic Techniques (1954), Supplement to the Psychological Bulletin, 51, No. 2, Part 2.
- Tiegs, E. W., W. W. Clark, and L. P. Thorpe (1942) California test of personality - secondary form A, Los Angeles, California Test Bureau.

Report I

RESEARCH PROBLEMS ON THE OCCUPATIONAL ACHIEVEMENT LEVELS OF FARM-REARED PEOPLE

A. G. HALLER

Reprinted from RURAL SOCIETY
Vol. 23, No. 4, December, 1958, pp. 395-362

PART II

ABSTRACT

Research has shown that farm-reared people have low levels of occupational achievement in the nonfarm world. Lipset has tried to explain this by pointing to the retarding effect of limited occupational and educational alternatives (supposedly characterizing rural life) on levels of occupational and educational aspiration. In turn, Lipset hypothesizes that levels of occupational and educational aspiration account for levels of occupational achievement. This paper summarizes the researchable assumptions of Lipset's explanation, reviews data testing several aspects of the explanation, presents new data testing the explanation, and presents a test of an alternative to one element of the explanation. The explanation is found to be only partially correct. It is valid in that levels of occupational achievement are correlated with levels of educational and occupational aspiration. It is invalid in that farm-nonfarm differences in levels of educational aspiration are not large enough to explain much of the variation in levels of occupational achievement, and it is invalid in that farm plans are found to explain all of the apparent relationship of farm residence to levels of occupational aspiration.

The author is associate professor of sociology and anthropology, Michigan State University.

RESEARCH has amply demonstrated that the men reared on farms tend to have less success on the job market than do those reared elsewhere. This was shown by Lipset in Berlin, Germany, in 1895,¹ by Rears and Haffin in Lexington, Kentucky, in 1915,² by Wadit in Stockholm, Sweden, in 1938,³ by Lipset in Oakland, California, in 1948,⁴ and most recently, by Freedman and Freedman in the United States as a whole in 1958.⁵ Farm areas have contributed a large proportion of the nonfarm population of the entire end of the world. Today about one-third of the nonfarm population of the United States were reared on farms.⁶ Doubtless this proportion will decrease with the continuing decrease in the farm population (now down to 12 per cent of the total population of the United States).⁷ Even so, basic research designed to account for, and thus control, the occupational success and failure of the farm-reared is important for two reasons: (1) The farm-reared probably will continue to constitute a numerically large segment of the American labor force, even though their proportionate contribution is lower than in previous decades. Research is needed to determine the factors that reduce the potential occupational achievement levels of these people, both to help in their personal adjustments and to reduce the talent loss in society. (2) The fact that the farm-reared in certain other countries also have had a relatively low degree of success on the job-market⁸ suggests that the problem may be widespread. In particular, societies hoping to change their economies from agriculture to industry may have a serious problem of changing the life orientation of their people so that effective industrial labor forces are developed. Basic research on the factors producing differential levels of achievement in the occupational structure of industrial societies such as the United States may have cross-cultural usefulness to the people of the so-called "underdeveloped areas."

Report I

RESEARCH PROBLEMS ON THE OCCUPATIONAL ACHIEVEMENT LEVELS OF FARM-REARED PEOPLE

A. O. HALLER

Reprinted from RURAL SOCIOLOGY
Vol. 23, No. 4, December, 1958, pp. 355-362

ABSTRACT

Research has shown that farm-reared people have low levels of occupational achievement in the nonfarm world. Lipset has tried to explain this by pointing to the retarding effect of limited occupational and educational alternatives (supposedly characterizing rural life) on levels of occupational and educational aspiration. In turn, Lipset hypothesizes that levels of occupational and educational aspiration account for levels of occupational achievement. The present paper summarizes the researchable assumptions of Lipset's explanation, reviews data testing several aspects of the explanation, presents new data testing other aspects of the explanation, and presents a test of an alternative to one element of the explanation. The explanation is found to be only partially correct. It is valid in that levels of occupational achievement are correlated with levels of educational and occupational aspiration. It is invalid in that farm-nonfarm differences in levels of educational aspiration are not large enough to explain much of the variation in levels of occupational achievement, and it is invalid in that farm plans are found to explain all of the apparent relationship of farm residence to levels of occupational aspiration.

The author is associate professor of sociology and anthropology, Michigan State University.*

* * * * *

RESEARCH has amply demonstrated that the men reared on farms tend to have less success on the job market than do those reared elsewhere. This was shown by Ammon in Berlin, Germany, in 1895,¹ by Beers and Heflin in Lexington, Kentucky, in 1945,² by Boalt in Stockholm, Sweden, in 1954,³ by Lipset in Oakland, California, in 1955,⁴ and most recently, by Freedman and Freedman in the United States as a whole in 1956.⁵ Farm areas have contributed a large proportion of the nonfarm population of the nation and of the world. Today about one-third of the nonfarm population of the United States were reared on farms.⁶ Doubtless this proportion will decrease with the continuing decrease in the farm population (now down to 12 per cent of the total population of the United States).⁷ Even so, basic research designed to account for, and thus control, the occupational success and failure of the farm-reared is important for two reasons: (1) The farm-reared probably will continue to constitute a numerically large segment of the American labor force, even though their proportionate contribution is lower than in previous decades. Research is needed to determine the factors that reduce the potential occupational achievement levels of these people, both to help in their personal adjustments and to reduce the talent loss in society. (2) The fact that the farm-reared in certain other countries also have had a relatively low degree of success on the job-market⁸ suggests that the problem may be widespread. In particular, societies hoping to change their economies from agriculture to industry may have a serious problem of changing the life orientation of their people so that effective industrial labor forces are developed. Basic research on the factors producing differential levels of achievement in the occupational structure of industrial societies such as the United States may have cross-cultural usefulness to the people of the so-called "underdeveloped areas."

PRESENT THEORY

To date, Lipset has provided the nearest approach to a theory accounting for the farm-reared person's low levels of occupational achievement.⁹ The general form of his explanation appears to be the social action theorist's proposition that differential human behavior in complex social systems is the result of differential motivation, which, in turn, is the result of the positions occupied by the actors during their preadult socialization period.¹⁰ His specific formulation is that certain elements of the structure of rural society--few immediately visible occupational roles, relatively poor elementary and secondary schools, and no university-level schools--limit the rural youth's awareness of the range of nonagricultural occupational alternatives and of the educational means for achieving the higher positions. The rural youth's limited awareness depresses his levels of educational and occupational aspiration. Low levels of educational and occupational aspiration thus generated result in low levels of occupation achievement.

PROBLEM AND METHODS

The purpose of this paper is to review the existing evidence bearing on the assumptions of Lipset's explanation, to present new data concerning some of these assumptions and alternative explanations, and to indicate areas where additional research is needed.

The assumptions not tested by Lipset are as follows: (1) the level of occupational achievement is positively correlated with the level of educational and occupational aspiration; (2) farm residence is negatively correlated with the level of educational aspiration; (3) farm residence is negatively correlated with the level of occupational aspiration; and (4) the same social and psychological factors are responsible for the low levels of achievement of farm-reared persons in both agricultural and industrial societies.

The data for this study are drawn from several reports, both published and unpublished. New data were collected during 1957 in Lenawee County, Michigan. The subjects are the 442 seventeen-year-old boys of the county who were born between July 1, 1939, and June 30, 1940, and who were in school during the testing period. Ideally, all of the age group in the county would have been tested. However, about 12 per cent who were no longer in school were omitted. Follow-up studies showed that about five out of six of the latter are sons of farmers. The consequent underrepresentation of farm boys may influence certain of the tests slightly but probably not appreciably. Lenawee County was selected as the site for three reasons: (1) It approaches the rural sociologist's ideal type of rural community, having a medium sized city--Adrian, population about 20,000--as the geographical, economic, and administrative center, having satellite villages and towns, and having an agricultural hinterland. (2) It has an evenly divided farm, rural nonfarm, and urban population. (3) Its light industry and proximity to the Detroit-Toledo industrial area provide youth with a diversified set of occupational alternatives.

Level of occupational aspiration is one of the variables used. This is taken from a forced-choice instrument developed to estimate the occupational prestige level desired by the subject while minimizing the non-prestige effects of his particular occupational choice.¹¹ It consists of eight questions regarding job preferences. Each question has ten ranked occupational alternatives scored from zero to nine inclusive, among which the respondent chooses one. The scores for rating the alternatives in each of the eight questions were drawn systematically from the entire range of the North-Hatt occupational prestige continuum.¹² For various reasons, ten of the original occupational titles were

not included. Possible total scores range from zero to seventy-two points. The median score was 35. In the analysis, subjects falling above the median were classified as having high levels of occupational aspiration and those below the median were classified as having low levels of occupational aspiration. Subjects who scored 35 were arbitrarily assigned to one of the two categories. Plans regarding farming were taken from an open-ended question asking the respondent what occupation he plans to follow; respondents were classified either as planning to farm or not planning to farm. College plans were taken from a series of questions designed to tap the students' intentions regarding entrance into a regular four-year college or university; respondents were classified either as planning to attend college or not planning to attend college. Farm-nonfarm residence is the last of these variables; respondents whose fathers were at least part-time farmers and who reside on farms were classified as farm residents and all others were classified on nonfarm residents.

EMPIRICAL EVIDENCE

Data bearing on Lipset's explanation: The first assumption in Lipset's explanation is that level of occupational achievement is positively correlated with level of educational and occupational aspiration. This assumption is partially supported by longitudinal data correlating young adult levels of occupational achievement with adolescent levels of aspiration. The correlation of level of occupational achievement to level of educational aspiration is $r = +.17$. The correlation of level of occupational achievement to level of occupational aspiration is $r = +.46$.¹³

The second assumption in Lipset's explanation is that level of educational aspiration is negatively correlated with farm residence. In general, research tends to refute this assumption. One study, conducted on youth in the final year of Wisconsin's high schools, shows that farm-reared boys have slightly lower levels of educational aspiration than do their nonfarm peers,¹⁴ but the observed differences are not large enough to account for the achievement differences noted by social scientists.¹⁵ Another study using the same sample shows that planning to farm (which is rare among nonfarm residents) sharply reduces levels of educational aspiration.¹⁶ This implies that the educational aspiration differences which have been noted between farm and nonfarm residents may be due to the belief that youth who plan to farm do not need college training, rather than to the supposed limited alternatives of rural society operationally summarized by the "farm resident" classification.

Lipset's third assumption is that level of occupational aspiration is negatively correlated with farm residence. This hypothesis was rejected for Wisconsin farm youth who do not plan to farm.¹⁷ However, this was not a thorough test because it failed to take into account the levels of occupational aspiration of youth who plan to farm. Data from the Lenawee County study provide a more complete test of this assumption. At first examination these data appear to support the notion that farm residence reduces levels of occupational aspiration. A chi-square test comparing the levels of occupational aspiration of farm and non-farm residents shows the apparent relationship to be statistically significant.¹⁸ First appearances require critical evaluation. Planning to farm depresses levels of educational aspiration, and such plans might indirectly depress levels of occupational aspiration. Boys who decide not to go to college as a result of planning to farm may give low aspiration responses to the index of level of occupational aspiration because they recognize that the college training they have denied themselves would be needed for high-level nonfarm jobs. For this reason, farm plans were controlled while retesting the relationship of level of occupational aspiration to farm-nonfarm

residence. In this instance, the chi-square test is not significant (computed by summing the chi-square values and degrees of freedom from the two component 2x2 tables). This means that the apparent relationship of low levels of occupational aspiration to farm residence is due to the presence in the farm group of a large number who plan to farm. Thus Lipset's third assumption is not valid in Lenawee County because the low levels of occupational aspiration apparently associated with farm residence (and the social structure differences implied by it) are actually due to another variable, planning to farm.

Lipset's fourth assumption is that the same social and psychological factors are responsible for the low levels of occupational achievement of farm-reared people in both agricultural and industrial societies. The research summarized and reported above shows that even though occupational achievement level is correlated with educational and occupational aspiration levels, the other aspects of his hypothesis find little support among the relatively sophisticated farm people of Wisconsin and Lenawee County, Michigan. However, it may be that Lipset's explanation will be found to be valid in agricultural societies. If this prove to be true (and as yet there appears to be no published research demonstrating it), it would mean that the causes of low occupational achievement of the farm-reared differ according to the type of society. This suggests that societies in different stages of industrialization may need to use different tactics in their effort to make industrial workers out of agricultural people.

Thus in general, research supports the assumption that level of occupational achievement is positively correlated with level of educational and occupational aspiration but fails to support the contention that the limited educational and occupational alternatives supposedly characterizing farm areas produce low levels of educational and occupational aspiration. These conclusions are valid only for postwar rural life in the test areas of Wisconsin and Michigan and presumably other rural areas having a similar degree of world awareness. They are untested in genuinely agricultural societies.

A test of an alternative hypothesis: The aim of all theoretical research is the formulation and verification of explanatory hypotheses. Inasmuch as some of the main elements of Lipset's explanation have been rejected, it is desirable to try to replace them with verified alternatives. The source most readily available is to be found in the reasoning suggesting the variable which, when controlled, dictated the rejection of Lipset's explanation. This crucial variable is the plan to enter farming. In one Wisconsin study it was shown that planning to enter farming greatly reduces level of educational aspiration,²⁰ and in the Lenawee County study it was shown that planning to farm, which is characteristic of many more farmers than nonfarmers, accounts for practically all of the farm-nonfarm variation in level of occupational aspiration. In the latter instance, farm plans were controlled because, it was reasoned, youth who plan not to attend college as a result of a desire to farm may well recognize that they have thus blocked their chances of high achievement in the nonfarm occupational world. If this be the case, they doubtless would indicate low levels of occupational aspiration when tested. In other words, if the boy who plans to farm believes college is not needed for farming, he will not plan to enter college; then when asked about nonfarm jobs, he would adjust his level of aspiration downwards so that it accords with his low level of educational aspiration. Thus, the low level of occupational aspiration could be due to a low level of educational aspiration.

This is itself a testable proposition which could serve as the alternative to Lipset's explanation. Verification of the hypothesis could provide the missing element of a complete explanation of the low levels of occupational achievement; rejection of the hypothesis will clear the way for the formulation and testing of new hypotheses. This may be tested by controlling college plans while testing the association of level of occupational aspiration to plans regarding farming. If the influence of planning to farming on level of occupational aspiration is indeed a function of college plans there should

be no significant association of level of occupational aspiration to farm plans among those planning to attend college or among those not planning to attend college. Data testing this hypothesis are presented in Table 1. The null hypothesis must be rejected, for the chi-square value for each of the two sections of the table is significant beyond the .05 level. Thus, one alternative to Lipset's explanation is unacceptable. The depressing effect of farm plans on levels of occupational aspiration cannot be attributed to plans regarding college.

The factors underlying the influences of farm plans on levels of occupational aspiration are apparently more complex than present hypotheses suggest. The association of levels of occupational aspiration to farm plans is not simply due to the farm youth's recognition of the role of advanced education in high level occupational achievement. Additional research on personality and social situational factors will be needed before a valid theory explaining why farm plans depress levels of occupational aspiration can be formulated. In turn, such a theory in conjunction with the valid parts of Lipset's explanation may help account for the poor performance of farm people in the labor market.

But the society within which these hypotheses are being tested is not typically agricultural. Unlike many other nations, modern America is a great urban society in which agriculture stands in an interdependent relationship with other segments of the total social structure and in which farmers have access to most of the sources of knowledge available to the other segments of the society. This is especially true in the North, in which the test sites of Michigan and Wisconsin lie. We need to replicate these studies, to retest Lipset's hypothesis, and to formulate and test new hypotheses in peasant societies. A general theory of the adaptation of farm people to urban-industrial society will not be possible until this is done.

Table 1. Relation of plans regarding farming to level of occupational aspiration scores, by college plans.

Level of occupational aspiration scores	Plans regarding farming	
	To farm	Not to farm
Planning to attend college		
High	8	150
Low	14	47
All	22	197
$\chi^2 = 15.57$ d.f. = 1 $P < .001$		
Not planning to attend college		
High	6	24
Low	34	121
All	40	145
$\chi^2 = 4.07$ d.f. = 1 $P < .05$		
$\chi^2 = 19.64$ d.f. = 2 $P < .001$ (no answer = 8).		

FOOTNOTES

*Journal Article No. 2147 of the Michigan State Agricultural Experiment Station. The writer wishes to express his gratitude to the school officials of Lenawee County and to his assistants, Arturo de Hoyos and Warren Sauer.

¹Otto Ammon, Die Gesellschaftsordnung und Ihre Natürlichen Grundlagen (Jena: Verlag von Gustav Fischer, 1895), p. 145. See also Pitirim A. Sorokin, Social Mobility (New York: Harper, 1927), pp. 144 ff. and 451; and Pitirim A. Sorokin, Carl C. Zimmerman, and Charles C. Galpin, A Systematic Source Book in Rural Sociology, III (Minneapolis: University of Minnesota Press, 1932), 531.

²Howard W. Beers and Catherine Heflin, Rural People in the City (Kentucky Agr. Expt. Sta. Bull. 478; Lexington, 1945).

³Gunnar Boalt, "Social Mobility in Stockholm," in Transactions of the Second World Congress of Sociology, II (London: International Sociological Association, 1954), 67-73.

⁴Seymour Martin Lipset, "Social Mobility and Urbanization," Rural Sociology, XII, 220-228.

⁵Ronald Freedman and Deborah Freedman, "Farm-Reared Elements in the Non-farm Population," Rural Sociology, XXI (1956), 50-61.

⁶Ibid., p. 52.

⁷Estimate of the Farm Population, April 1950 to 1957 Series Census-AMS (P-27), No. 24; Washington, D.C.: U.S. Department of Commerce, Bureau of the Census, 1957).

⁸Ammon, op. cit.; Boalt, op. cit.

⁹Lipset, op. cit.

¹⁰Talcott Parsons, Edward A. Shils, and James Olds, "Values, Motives, and Systems of Action," in Talcott Parsons and Edward A. Shils, eds., Toward a General Theory of Action (Cambridge, Mass.: Harvard University Press, 1951), pp. 53 ff.

¹¹A. O. Haller, Occupational Aspiration Scale (East Lansing: Michigan State, 1957).

¹²National Opinion Research Center, "Jobs and Occupations: A Popular Evaluation," Opinion News, IX (Sept., 1947), 3-13.

¹³Data compiled by William H. Sewell and A. O. Haller, on file at the University of Wisconsin. It is anticipated that the results of this study will be published in the near future.

¹⁴A. O. Haller and W. H. Sewell, "Farm Residence and Levels of Educational and Occupational Aspiration," American Journal of Sociology, LXII (1957), 407-411.

¹⁵Ammon, op. cit.; Beers and Heflin, op. cit.; Boalt, op. cit.; Lipset, op. cit.

FOOTNOTES (continued)

¹⁶A. O. Haller, "The Influence of Planning to Enter Farming on Plans to Attend College," Rural Sociology, (1957), 137-141.

¹⁷Haller and Sewell, op. cit.

¹⁸The zero-order chi-square values are calculated according to the standard formula,

$$\chi^2 = \sum \frac{(f_o - f_t)^2}{f_t} \quad . \quad \text{See G. Udry Yule and M. G. Kendall, An Introduction to the Theory$$

of Statistics (13th ed.; London: Charles Griffin and Co., 1968), pp. 413-433, esp. 416.

¹⁹George W. Snedecor, Statistical Methods (4th ed.; Ames: Iowa State College Press, 1946), pp. 188-189; and Yule and Kendall, op. cit., p. 426.

²⁰A. O. Haller, "The Influence of Planning to Enter Farming on Plans to Attend College," op. cit.

Report II

Planning to Farm: A Social Psychological Interpretation*

A. O. Haller†

ABSTRACT

Social psychological theory regards planning to farm as an early stage of the total act of entering farming. Similarly, from abstract theory it can be deduced that planning not to farm is an early phase of the act of leaving the farm world to enter the nonfarm world. If this is true, it may be hypothesized that the latter act requires social and psychological support just as entering farming does (shown by previous research). Ten factors possibly supporting nonfarming are tested for association with planning not to farm. Seven of the tests tend to confirm the hypothesis; three tend to reject it. Overall, it is concluded that this hypothesis is tenable.

Reprinted from Social Forces

Vol. 37, No. 3, March 1959, pp. 263-268

Report II

Planning to Farm: A Social Psychological Interpretation*

A. O. Haller†

ABSTRACT

Social psychological theory regards planning to farm as an early stage of the total act of entering farming. Similarly, from abstract theory it can be deduced that planning not to farm is an early phase of the act of leaving the farm world to enter the nonfarm world. If this is true, it may be hypothesized that the latter act requires social and psychological support just as entering farming does (shown by previous research). Ten factors possibly supporting nonfarming are tested for association with planning not to farm. Seven of the tests tend to confirm the hypothesis; three tend to reject it. Overall, it is concluded that this hypothesis is tenable.

Reprinted from Social Forces

Vol. 37, No. 3, March 1959, pp. 263-268

Planning to Farm: A Social Psychological Interpretation

It doubtless is true that purely economic factors have a great deal to do with determining who does and who does not enter farming. Even so, it is clear that many to whom farms apparently are economically accessible elect to leave farming and enter other occupations. Recent research theory aimed at explaining and predicting differential plans regarding farming has been drawn from social psychology. Implicitly, the social psychological approach holds that entering farming as a career is a single continuous act often occurring over many years. That is, the position assumes that the plan to farm is simply an early phase of the total act of entering farming. Accordingly social psychological research to date has centered upon the plan to farm. Two such studies are known to the writer. One, conducted on Washington rural youth, was published by Murray A. Straus in 1956;¹ the other, conducted on Wisconsin rural youth, was the subject of Charles A. Ramsey's Ph.D. dissertation at the University of Wisconsin in 1952.² Despite the strikingly different types of farming characteristic of the two areas the results are quite similar. Ramsey's study shows that the plan - whether or not to farm - is essentially a realistic appraisal of one's own chances of success, thus showing that the plan does represent the first stage of an act. In addition, his data show that the person who plans to farm tends to have a farm accessible to him, and to have values supporting farming as an occupation. Straus, who appears to take the realism of the choice for granted, shows that the economic potential of the home farm, the existence of a value system functionally related to farming, and primary group support, are the general factors influencing the plan to farm.

From a review of literature on occupational behavior and related matters,³ it appears that a general social psychological explanation for the selection of farming as an occupation may be found in action theory.⁴

On the whole, this explanation holds that the act is the resultant of the situation within which the act takes place together with the orientations to action brought to the situation by the actor. The situation within which action takes place includes the objective probability of carrying out the act as well as the supportive or non-supportive attitudes of those surrounding the actor. In the case of differential plans regarding farming this means the objective accessibility or inaccessibility of a farm, together with primary group support for the plan regarding farming. The orientations to action include all the value, attitude and personality factors relevant to the act. In the case of differential plans regarding farming, these include orientations toward farm work and nonfarm work, as well as deeper values and personality characteristics supporting either.

A comparison of this theoretical formulation with the research done to date shows a tendency to overstress the factors supporting the plan to farm, to the relative neglect of its alternative, the plan not to farm. That is, according to action theory the plan not to farm is as much an incipient act as is the plan to farm. Therefore, it is to be expected that choosing to leave farming requires group support, attitudes, values and personality factors which facilitate it, just as choosing to farm has similar factors facilitating it.

The purpose of the present paper is to augment existing social psychological research theory on planning to farm by showing that those planning not to farm tend to have the primary group attitudes, and personal values, attitudes and personality characteristics supporting success in nonfarm occupations. This means that predictions of who will and who will not plan to farm will be more accurate if we take into account not only the previously stressed factors supporting farming as a choice but also the factors supporting non-farming. Stated differently, social psychologically speaking, planning not to farm is more than the negation of planning to farm. It is part of the act

of entering the nonfarm world, and it must be studied in its own right.

The hypotheses of the study follow directly from the theoretical framework outlined above. In most cases their rationale is obvious. When it is not, the rationale is stated following the hypothesis.

A. Hypotheses regarding primary group support relevant to success in nonfarm occupations.

- (1) Farm boys who plan not to farm tend to have parents having high levels of educational aspiration for them.
- (2) Farm boys who plan not to farm tend to have parents having high levels of occupational aspiration for them.
- (3) Farm boys who plan not to farm tend to choose and be chosen by farm boys who plan not to farm.

B. Hypotheses regarding values relevant to success in nonfarm occupations.

- (4) Farm boys who plan not to farm tend to place a lower value on remaining in one community (thus being more ready to move with job opportunities).
- (5) Farm boys who plan not to farm tend to place a higher value on change.

C. Hypotheses regarding attitudes relevant to success in nonfarm occupations.

- (6) Farm boys who plan not to farm tend to have higher levels of educational aspiration.
- (7) Farm boys who plan not to farm tend to have higher levels of occupational aspiration.
- (8) Farm boys who plan not to farm tend to have more flexibility regarding their occupational preference. (This hypothesis is included because in a complex labor market a person needs a certain amount of flexibility if he is to be a success.)

D. Hypotheses regarding personality characteristics relevant to success in nonfarm occupations.

(9) Farm boys not planning to farm tend to be higher in measured intelligence. Intelligence is taken here to mean the ability - learned or unlearned - to effectively manipulate the symbols required and rewarded by social systems stressing technical and economic skills. Presumably nonfarm occupations require these symbolic skills more than the occupation of farming.

(10) Farm boys planning not to farm tend to exhibit greater interest in events external to the self. Interest in persons and activities outside one's immediate environment is the motivational counter-part of intellectual ability. It focuses on the readiness to be involved with the external world rather than the capacity to do so. (This dimension has a superficial resemblance to introversion-extroversion. However both extroverts and introverts may be concerned with technically relevant symbolic skills.)

PROCEDURE

Data testing the hypotheses were collected from all 109 17-year old farm boys in school in Lenawee County, Michigan, in the spring of 1957. The county is in the corn belt, and is one of the richest of Michigan's agricultural areas. It has a thriving light industry in its own right and is also near the metropolitan industrial area of Detroit and Toledo. This means that the boys in the sample have unusually good opportunities for both farm and nonfarm work within the general area. The opportunities for higher education are excellent. There are several small colleges and four universities within commuting distance of the county.

The data consist of questionnaires and standardized test forms filled out by the boys during school time. Trained social psychologists administered

all forms. The hypotheses were tested by means of chi-square tests of significance, using the .05 level as the critical point for acceptance or rejection.⁵

The plan regarding farming was measured by an open-ended question asking each boy the occupation he planned to follow. All had at least one occupational choice, though some were quite tentative. Boys stating that they planned to farm were so classified, and those not stating that they planned to farm were correspondingly classified.

Data to test the hypotheses concerning primary group influences were taken from questions about the boys' parents and peers. Each boy's parents' level of educational aspiration for him (used in Hypothesis 1) was measured by his responses to two identical questions, one for each parent, worded as follows: "As to continuing my education beyond high school, my father (mother):

- () has strongly encouraged me to continue.
- () has given me some encouragement to continue.
- () has never said much about it.
- () feels I'd be better off going to work after high school.
- () feels I should quit high school and go to work."

Responses to each question were arbitrarily scored from zero to four, and the scores for both were summed to provide an overall index of the boy's parents' level of educational aspiration for him. The parents' levels of occupational aspiration for the boys (used in Hypothesis 2) were measured analogously. Each boy was asked: "As to the kind of job I go into, my father (mother):

- () wants me to have a very important job.
- () wants me to have a job that's quite a bit better than most jobs around here.
- () wants me to have a job that's a little better than most around here.

() feels the job I take should be as good as most around here.

() doesn't care how good the job I go into is."

Again, the responses to each of the two questions were arbitrarily scored from zero to four, and the scores for both were summed to provide an overall index of the boys' parents' level of occupational aspiration for him.

Measurement of peer group influences on planning to enter nonfarm work (used in Hypothesis 3) was attempted by asking each boy to name his best friends. A peer-clique or interaction group was defined as consisting of two farm boys who chose each other. As it happened, there were only twelve such pairs of farm-reared boys, too few to test directly the hypothesis for which the questions were asked. But the lack of information itself provides a test about which we shall have more to say later.

Hypotheses regarding values relevant to success in nonfarm occupations were tested by responses to questions on two of the areas of the Work Beliefs Check-List.⁶ This is a form consisting of a number of questions sociologists believe are important in determining one's behavior in the labor market. The questions are grouped into six Belief-Value Areas, only two of which would be expected to differentiate between those who plan to farm and those who plan not to farm. All the Work Beliefs Check-List questions are answered by checking Agree or Disagree. The first of these (B-V Area 3, used in Hypothesis 4) measures the degree to which the person values living permanently in one community. It includes such questions as, "A man's first loyalty should be to his home community" and "People who can't leave their hometowns are hard for me to understand." The lowest possible total score for B-V Area 3 is zero and the highest is six. The second of the value instruments (used in Hypothesis 5) is B-V Area 4, which measures the degree to which the person values change. It consists of such questions as "Life would be boring without new experiences" and "The happiest people are those who do things the way their parents did." The possible scores on B-V Area 4 range from zero to seven.

Hypotheses regarding attitudes relevant to success in nonfarm occupations were tested by responses to several different types of data. Level of educational aspiration (used in Hypothesis 6) was measured by asking where and how long each boy planned to attend college. Those who did not plan to attend a college leading to a regular four year degree were classified as wanting zero years. All other responses were grouped into rough categories of one to two years, three to four years, etc. Level of occupational aspiration (used in Hypothesis 7) was measured by means of the Occupational Aspiration Scale (OAS),⁷ a multiple question test based upon the 1947 NORC study of the prestige of occupations.⁸ In the OAS, the respondent is forced to choose from among the one job he prefers / ten occupations of widely different prestige value. He makes such a choice eight different times, always choosing among jobs which have not been presented before. His score for any one question may range from zero to nine. Thus the lowest possible total OAS score is zero, and the highest is seventy-two. (In this study no one chose either extreme.) The flexibility of the boys' commitment to one particular occupational choice (used in Hypothesis 8) was inferred from two sources: the open-ended questions regarding occupational choice, and another question concerning the degree to which the respondent had made up his mind. A boy's occupational choice would have been classified as "completely flexible" (there were none such) if he failed to mention any possible occupational choices at all. He was classified as "Highly flexible" if he mentioned two or more alternatives in open-ended questions regarding job plans and if he also checked "I'm not sure my mind is made up" in response to a question regarding the certainty of his choice. He was classified as "Flexible" if he answered the closed question on certainty of choice by checking "I'm not too sure but I think my mind is made up". He was classified as "Inflexible" if he answered the question on certainty of choice by checking "I feel sure my mind is made up".

Hypotheses regarding personality characteristics relevant to success in nonfarm occupations were tested by data taken from Cattell's tests called Test of G - Culture Free⁹ and the 16 P.F. Test.¹⁰ Data on measured intelligence (used in Hypothesis 9) were taken from the Test of G₁. This is an intelligence test which does not directly involve the use of language or number symbols. Rather, it depends upon analogies in visual forms to elicit differences in logical reasoning ability. Interest in events external to the self was measured by Factor H on the 16 P.F. Test. This variable differentiates between persons who have a highly developed interest in other people and things as compared to persons who are shy, withdrawn, and feel inferior. It is based upon "yes-no" responses to questions on the person's conceptions of his behavior and feelings.

RESULTS

Table 1 presents a summary of the hypotheses and their respective tests. Hypotheses (1) and (2), which refer to parental support for successfully entering the nonfarm occupational world, are clearly congruent with the evidence. The parents of those who plan not to farm tend to have higher levels of educational and occupational aspiration for their sons than do parents of those who plan to farm.

Hypothesis (3) refers to peer group support for the plan not to farm. A peer group was operationally defined as a pair of sample members who chose each other as best friends. The hypothesis could not be tested as planned because there were only 12 peer groups so defined. Thus there were too few peer groups on which to base a test. But this fact alone is enough to make the hypothesis untenable. That there are so few peer groups among farm boys of the same age doubtless is due to the residential dispersion of farm boys. In this area, peer groups appear to be formed among school mates rather than neighbors. When one reflects upon this, and upon the fact that the farm boys

attend school with nonfarm boys, it becomes clear that the probability is quite low that farm boys in this limited age bracket would choose each other. This is without regard to whether a given boy does or does not choose to farm. So it must be concluded that on the average neither the one who chooses to farm nor the one who chooses not to farm has any substantial amount of peer group support for his choice among other farm boys.¹¹

The hypotheses regarding work-related values are numbers (4) and (5) in Table 1. Here the conclusions are at variance with one another. While it is true that those who plan not to farm tend to value change most highly, it is not true that they place a lower value on staying in one community. It must be concluded that only one of the value areas supports planning not to farm.

The hypotheses regarding attitudes presumably supporting nonfarm work are numbers (6), (7), and (8). Each of these must be accepted. The boy who chooses not to farm tends to have higher levels of educational and occupational aspiration and to be more flexible regarding his occupational preference than does the boy who plans to farm. High levels of educational and occupational aspiration support a successful move to nonfarm work,¹² and given the relatively limited number of openings in most specific nonfarm occupations, so also does flexibility in occupational choice.

Personality factors presumably related to choosing or not choosing to farm are tested in Hypotheses (9) and (10). Here the two tests are in disagreement. There is no difference in measured intelligence between those who choose to farm and those who choose not to farm in this sample.¹³ The variable measuring concern with events external to the self, which is interpreted as the motivation to utilize one's intellectual capacity, is positively related to planning not to farm, however. This is in accord with the result predicted by Hypothesis (10). Thus it must be concluded that only one of the two personality variables logically supporting success in nonfarm work is

empirically related to the choice.²⁴

CONCLUSION

In this paper we have used the general theory of action to interpret the farm boy's choice of farming or nonfarming as incipient acts, each logically tending to work itself out to a corresponding behavioral conclusion. Looked at in this way we have seen that scientific knowledge of planning not to farm can augment our knowledge about planning to farm. This is because each of these alternatives is a phase of a human act. Acts are never performed in vacuo; they require social and psychological underpinning. Other investigators have shown that accessibility of a farm, values functionally related to farming as an occupation, and primary group influence support the plan to enter farming. The present research shows that parental support for success in nonfarm work and certain values, attitudes, and personality characteristics supporting success in nonfarm work tend to be significantly associated with planning not to farm.

The findings of this study, coupled with the findings of Ramsey and Straus, indicate a promising approach to social psychological research attempting to predict which farm boys will plan to farm. Future studies should measure the primary group, value, attitude, and personality characteristics supporting both farm and nonfarm occupational choices. This should substantially increase our predictive efficiency.

10. The M. F. E. Test, Page R, Institute for Personality and Ability Testing, 125 Lombard Drive, Champaign, Illinois 61810.

FOOTNOTES

- * Journal article number 2308 of the Michigan State Agricultural Experiment Station. In part, the research reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education, and Welfare. The writer wishes to acknowledge the invaluable aid of I. W. Miller and the MSU computer and tabulating services, as well as the cooperation of the Lenawee County school officials.
- † Michigan State University, East Lansing, Michigan.
1. Murray A. Straus, "Personal Characteristics and Functional Needs in the Choice of Farming as an Occupation," Rural Sociology 21: 3-4 (September-December 1956) pp. 257-266.
2. Charles A. Ramsey, "Vocational Intentions of Wisconsin Farm Boys," unpublished doctoral dissertation, University of Wisconsin (1952).
3. A. O. Haller, "Research Problems on the Occupational Achievement Levels of Farm-Reared People," Rural Sociology, 23: 4 (December 1958), (in press).
4. Talcott Parsons, et. al. "Values, Motives and Systems of Action," in T. Parsons and E. A. Shils, eds., Toward a General Theory of Action, Cambridge, Massachusetts: Harvard University Press (1951), pp. 53 ff.
5. See A. L. Edwards, Statistical Methods for the Behavioral Sciences, Rinehart and Company, Inc., New York (1954), pp. 379-380.
6. A. O. Haller, The MSU Work Beliefs Check-List, Department of Sociology and Anthropology, Michigan State University (1957).
7. A. O. Haller, Occupational Aspiration Scale, East Lansing, Michigan, 1957. Also see I. W. Miller, Jr., "Normalized Data for the O.A.S. Raw Scores," mimeographed paper published by the Social Research Service, Michigan State University (April 1958).
8. National Opinion Research Center, "Jobs and Occupations: A Popular Evaluation," Opinion News, 9 (September 1947), pp. 3-13.
9. R. B. Cattell and A. K. S. Cattell, Test of G - Culture Free-Scale 3A, Institute for Personality and Ability Testing, 1608 Coronado Drive, Champaign, Illinois (1950).
10. The 16 P. F. Test, Form B, Institute for Personality and Ability Testing, 1608 Coronado Drive, Champaign, Illinois (1950).
11. In a forthcoming article we shall show that among all the 17-year old boys in school in Lenawee County, there is a tendency for members of the peer group to have similar levels of educational and occupational aspiration. While we have not tested these hypotheses specifically among farm boys except as in Hypothesis (3), it may be argued by inference that nonfarm peers influence the levels of aspiration of farm boys. But there appears to be no reason to suppose that even this influence should be distributed differently among those who plan to farm than it is among those who plan not to farm. Hence the educational and occupational aspiration levels of both groups are probably influenced equally.

FOOTNOTES
(cont'd.)

was

12. This found by W. H. Sewell and the writer in unpublished longitudinal research in Wisconsin. Levels of educational and occupational aspiration of high school upper-classmen are positively correlated with their actual levels of educational and occupational achievement some years later.

13. Most other studies (see Ramsey, *op. cit.*; and A. O. Haller, "The Influence of Planning to Enter Farming on Plans to Attend College," *Rural Sociology* 22: 2, 1957, pp. 137-141) show a positive correlation between intelligence and planning not to farm. Straus', (*op. cit.*) findings regarding the relation of intelligence to plans regarding farming, however, are consistent with those of the present study. It may be that there are regional differences in the behavior of these variables.

14. Additional analysis shows that three other 16 P. F. Test factors are significantly related to plans regarding farming. These are Factor C ("Emotional stability or ego strength versus dissatisfied emotionality"), Factor Q₂ ("Independent self-sufficiency versus lack of resolution"), and Factor Q₃ ("Will control and character stability"). Perhaps one or more of these may be interpreted as indicating a general factor of self-reliance. Interestingly, Ramsey (*op. cit.*) also found self-reliance to be correlated with planning not to farm. If in fact this variable is measured by one or more of the three above factors, we may speculate that the act of leaving farming requires a more self-reliant type of person than does simply remaining in farming. To the writer this seems tenuous because of the lack of clear theoretical justification, but it may be true nevertheless.

Table 1

Summary of Hypotheses and Tests Concerning Planning to Enter Nonfarm work

Hypothesis - Farm boys who plan not to farm tend to:	χ^2	df	P	Direction	Conclusion Concerning Hypothesis
(1) Have parents with high levels of educational aspiration for them. (Questionnaire data).	6.16	1	$<.05$	Nonfarm High	Accept
(2) Have parents with high levels of occupational aspiration for them. (Questionnaire data).	7.11	2	$<.05$	Nonfarm High	Accept
(3) Choose and be chosen by farm boys who plan not to farm. (Sociometric choice questionnaire data).	Too few cases of farm-to-farm choices for test planned				Reject
(4) Place a lower value on living in one community. (Work Beliefs Check-list scores).	2.10	2	7.05		Reject
(5) Place a higher value on change. (Work Beliefs Check-list scores).	6.40	2	$<.05$	Nonfarm High	Accept
(6) Have higher levels of educational aspiration. (Questionnaire data).	25.29	2	$<.001$	Nonfarm High	Accept
(7) Have higher levels of occupational aspiration. (OAS scores).	7.99	2	$<.05$	Nonfarm High	Accept
(8) Have less commitment to their particular occupational preference. (Questionnaire data).	10.03	2	$<.01$	Nonfarm Less	Accept
(9) Be higher in measured intelligence. (Cattell's Test of G-Culture Free).	0.27	2	7.05		Reject
(10) Exhibit greater interest in events external to the self. (Cattell's 16 P. F. Test, Factor H).	6.61	2	$<.05$	Nonfarm greater	Accept

Report III

Abstract

The Occupational Achievement Process of Farm-Reared
Youth in Urban-Industrial Society

by

A. O. Haller

Farm-reared people are relatively unsuccessful in urban occupations. It is known that youth who have low levels of occupational and educational aspiration are eventually low achievers. Since farm-reared people have low levels of aspiration it has been suggested that the supposedly limited general environment provided by rural society limits the horizons of the farm youth. Later research has disproved this hypothesis by showing that only those farm boys who plan to farm have low levels of aspiration.

The present paper, based on data from farm boys in a highly urban-industrial region with excellent educational facilities, is an attempt to infer a valid explanation for the farm-planner's low levels of educational and occupational aspiration and to explain differential plans regarding farming. The explanation inferred holds that farming is the normal occupational self-conception of farm-reared boys. This normal self-conception may be abandoned if the boy has an unusually self-reliant and inquisitive personality, if his parents are deviants in that they want him to be mobile, or if he perceives farming as inaccessible. If he develops a self-conception of non-farmer he will tend to utilize the information available in the area to develop the higher levels of aspiration needed for successfully entering urban work; if his self-conception remains that of farmer he will tend not to utilize the information. Thus those wishing to increase the levels of occupational achievement of farm-reared youth should attempt to modify the boy's expectation that he will be a farmer.

The findings may be useful for agriculture in other urban-industrial societies, and, with modifications, in other types of societies. But before this conclusion is reached, the explanation should be retested.

Paper presented before the 4th World Congress of Sociology, Milan and Stressa, Italy, September, 1959, and before the joint meetings of the Rural Sociological Society and the American Sociological Association, August 29, 1960; published in Rural Sociology, 25:3 (September 1960), pp. 321-333.

The Occupational Achievement Process of Farm-Reared Youth in
Urban-Industrial Societies*

by

A. O. Haller

Michigan State University

One of the great problems of our age concerns the remolding of agricultural populations into effective urban work forces. Most European nations have confronted this problem and still confront it to some degree even today. The problem is even more important for the economically-deprived nations now trying to increase their productive capacity. All together, the problem involves drastic shifts in the typical life orientations of many millions of people. Given a change of such magnitude, it is to be expected that the sociologist would have at his command a large amount of verified knowledge concerning the social and psychological conditions under which rural youth enter the urban occupational world. In fact, however, such data appear to be limited. There appear to be no published quantitative sociological or social psychological analyses of differential levels of occupational achievement among rural people moving into cities outside of the West, and there are only a few such even in the West. For the most part even these tell us only that the farm-reared person tends to enter the urban labor force at a low level and to stay there.^{1/} Almost none of these provide sociological explanations for the phenomenon they describe, but there are exceptions.

Lipset has tried to provide an explanation for the low occupational levels of the rural people in his sample of persons employed in the San Francisco Bay

area of the United States. He notes the general lack of educational facilities and limited occupational differentiation in rural areas, and argues that these restrict the rural youth's range of knowledge, thus resulting in low levels of educational and occupational aspiration. It is the low levels of aspiration which he believes produce the low levels of achievement which he and others have observed. Unfortunately Lipset provides no data for the details of his argument.^{2/}

Recently, social psychologists at the University of Wisconsin and Michigan State University have attempted to state Lipset's explanation in testable form and to employ it if possible among farm people of the industrial North Central region of the United States. The resulting studies have been conducted mostly among farm and non-farm people in the rural hinterland of our great industrial centers of Milwaukee and Detroit, sites which were chosen so as to learn about the occupational behavior of farm-reared youth who live within the zone of influence of some of the most highly urbanized areas of the world.^{3/} Naturally this restriction prohibits immediate generalization to societies in other stages of industrialization, but the studies still may help us guess what may be in store for some of these societies in the future. One of these, a longitudinal study, shows one segment of Lipset's explanation to be at least partly correct. Levels of educational and occupational aspiration are positively correlated with levels of educational and occupational achievement.^{4/} But other studies show that the main part of his explanation, holding that the limited educational and occupational alternatives supposedly characterizing rural society result in low levels of aspiration for the rural youth, does not hold at all in the test areas. In Wisconsin in 1948, the main apparent relation of farm residents to levels of educational aspiration has been shown to be mostly due to the presence among the farm-reared of a large group who plan to farm.^{5/} Essentially the same phenomenon has been noted in a Detroit area test site where the presence among the farm-reared of a large group who plan to farm, accounts for all of the apparent

relation of farm residence to levels of occupational aspiration.^{6/} Research has shown this relationship to be more complex than had been thought. For this reason, it has become evident that a detailed analysis is needed of the relation of farm plans, personality and social structural influences on levels of educational and occupational aspiration. Such an analysis should tell us the points in the personality system or social system where changes may be most effectively inserted.

The purpose of this paper is to show the results of an exploratory study which may provide the needed empirically accurate explanation. More precisely, it is the purpose of this paper to present a plausible explanation for the influence of farm plans on levels of educational and occupational aspiration which can also account for the development of the farm plan itself. Since this explanation is for the most part inferred from data rather than derived directly from theory, it must be considered tentative. In any case, it applies only to the relatively literate rural people of highly urbanized industrial areas. Clearly then, it needs to be tested under similar conditions elsewhere, and to be reformulated for use in economically-deprived societies.

DATA

Subjects and Site. Data for the study were provided by the 109 seventeen-year-old farm boys in school in Lenawee County, Michigan, during the spring of 1957. These boys constitute about seventy percent of the total age group. The others were no longer in school, but it is doubtful that their absence changes the conclusions substantially. Lenawee County is rich in agriculture and in light industry. Its farmers are independent operators, specializing in dairying, corn raising, beef-feeding, etc., for sale on the national and international market. Many of them, about one-half of the present sample, have nonfarm

occupations in addition to their farm work. The geographic, administrative, and trade center of the county is a city of 20,000 residents; in addition the county contains a few satellite villages and towns. The farm, rural non-farm, and urban populations are approximately equal in number. The county has a full range of American social class levels, including a few wealthy families, a number of families of professionals as well as the families of clerical, skilled and semi-skilled workers, and of course a number of farm families. There are four universities and some smaller colleges within or nearby, and excellent highways provide ready access to them from all points in the county. Moreover, it has full coverage by means of radio, television and newspapers. It was this set of factors, plus the proximity of Detroit's complex occupational structure and its own diversified occupational structure which dictated the selection of Lenawee County as the research site. This provides an environment for youth which though agricultural, is nevertheless rich in its potential for imparting to them the detailed knowledge of the urban-industrial occupational world which Lipset believes produces high levels of educational and occupational aspiration.

Data. The data consist of school records and responses to standardized tests and questionnaires administered by trained social psychologists and filled out by the students in school.

The Occupational Aspiration Scale^{7/} (OAS) is a multiple-item forced-choice instrument designed to measure the youth's general social prestige level of occupational aspiration. It is based on the NORC study of prestige of occupations in the United States^{8/} and has a range of 0 to 72 points, with a median of 35 points. The 16 P-F Test^{9/} is an instrument designed to measure the sixteen orthogonal dimensions of personality which have been derived empirically by R. B. Cattell and his co-workers. The MSU Work Belief Check-List^{10/} (WBC-L)

is still another instrument used. It consists of a number of forced-choice questions designed to measure six areas of belief which social scientists have hypothesized as affecting ability to successfully adapt to the conditions of urban economic life. They include such areas as evaluation or attitude toward change, attitude toward migrating, and others. The Test of G-Culture Free^{11/} (CFIQT) a measure of general intelligence, is another form used. It is used to measure the reasoning ability presumably necessary for adequate performance in urban-industrial society. Pre-tested questionnaires, called the "Occupational Plans of Michigan Youth" (OPMY) and the "Educational Needs of Farm Boys" (ENFB) were used to elicit information about the youth's future plans, their beliefs about education, family, attitudes and background, as well as related matters. The final datum, scholastic achievement level, is measured by grades in school in 1956-1957, and was taken from school records.

Method. This study is intended to derive new hypotheses to replace the previous ones which have been found to be inadequate. For this reason, it uses methods of exploration rather than derivation and tests of hypotheses. In general, the method is to compare personalities, social contexts, and educational and occupational orientations of those who plan to farm with those who do not plan to farm. Standard two-tailed tests of significance are used to decide whether or not those who plan to farm differ from those who do not. This procedure yields two groups of variables, those related to the plan regarding farming and those not related to the plan regarding farming. The final tentative explanation for the relation of planning to farm to low levels of educational and occupational aspiration and for differential plans regarding farming is an interpretation of the variables found to be related and unrelated to plans regarding farming.

RESULTS

The results of the statistical analysis are summarized in Table 1. As part A of the table indicates, the Lenawee County farm boy who plans to farm tends to lack ego strength and be emotionally unstable, to be withdrawn or shy and timid, to lack resolution, and to lack will control and character stability. On the other hand the boy who does not plan to farm tends to be emotionally stable, to be adventurously resilient, to be independent or self-sufficient, and to have firm will control and character stability. No other personality factors significantly discriminate between those who do and do not plan to farm.

These data appear to show that the average Lenawee County youth who plans to farm is one who lacks self-control and is either disinterested in people or is afraid of them, while the youth who plans to leave farming is confident of himself and of his relations with others, and is actively interested in people and exerts outside himself. This suggests that the one who plans to leave farming is most capable of adapting to new situations and new people.

Part B of Table 1 is concerned with differences in the social contexts of those who do and do not plan to farm. The parents of the boys who plan to farm tend to have relatively low levels of college or university educational aspiration as well as low levels of occupational aspiration for them. In addition, those who plan to farm tend to be members of small (three siblings or less) families. The other social context variables tested--family socio-economic status, father's education, father's occupational prestige position (many fathers have more than one occupation), whether or not the family owns the farm, and the occupational prestige position of the fathers of the subjects' best friends--are not related to the plan regarding farming.

Thus, the data show that of all Lenawee County farm youth, those most likely

to choose to leave farming are the ones whose parents hope to see them become relatively well-educated and to see them enter relatively high-level occupations. Those planning to farm are the opposite. The data regarding family size and farm plans are probably a reflection of the greater accessibility of a farm to persons perceiving themselves as having fewer competitors for it.

Part C of Table 1 is concerned with variables describing the individual's orientations toward the world of work and toward education. Specifically the data show that boys planning to farm tend to view change as undesirable, to be wholly committed to farming as their one vocational choice, to have low levels of college or university educational aspiration, to have low general social prestige levels of occupational aspiration, to believe that college or university training is not needed by farm boys who do not plan to farm, and to have taken relatively more course work in agriculture. Conversely, those who do not plan to farm tend to think of change as a good thing, to be less committed to any one vocational choice (thus being psychologically prepared to utilize different opportunities), to have high levels of college or university educational aspiration, to have high general social prestige levels of occupational aspiration, to believe that college or university training is needed by farm boys who do not plan to farm, and to take less course work in agriculture (and, of course, more in other areas).

The two groups do not differ on the degree to which they believe work serves expressive rather than purely instrumental purposes, on evaluation of punctuality, on attitude toward migrating, on the belief that forces external to the self rather than internal determine the course of events, on their attitudes toward deferring gratification,^{12/} on the degree to which they believe that college or university training is needed by farm boys who plan to be farmers, and on the

adequacy of their performance in school subjects.

Data from Part C thus appear to show that the boy who plans to farm tends to have beliefs and aspirations which are not well suited to success in pursuits other than farming. The boy who plans to leave farming tends to have the opposite characteristics. Of special importance to the ensuing discussion is the fact that the two groups do not differ regarding the amount of college or university education believed to be necessary for boys planning to farm; they agree that he does not need much. But they differ regarding the amount of college or university education believed to be necessary for boys not planning to farm. 13/

INTERPRETATION

The objective of this paper is to explore differences among farm boys who do and do not plan to farm in a rich agricultural area in the hinterland of the Detroit urban-industrial area, so as to formulate a tentative explanation for the low levels of nonfarm occupational aspiration of farm-reared people. In turn, this explanation may be coupled with the known relationship between level of occupational and educational aspiration and levels of occupational achievement to provide an explanation for the low levels of occupational achievement of farm-reared boys. In a few words, the interpretation proposed depends upon the effective environment of farm boys, their differential reactions to it, the occupational self-conceptions which result from this, and the information-seeking behaviors which result from their self-conceptions.

The Effective Environment. Despite full coverage by the mass media, despite the proximity of the urban-industrial area, and despite the adequacy of the schools, most farm people ^{appear to be} more nearly oriented to life-styles and beliefs relevant to agriculture than to other ways of life. The farm-reared

boy is therefore reared in an effective environment which tends not to utilize the information available about the urban world of work. The belief that change is of doubtful value and the belief that boys who do not plan to farm need little college or university training are cases in point. Straus makes a similar observation among Washington farm boys: those who plan to farm have values functionally useful to farming. These may or may not be useful in the nonfarm world.^{14/} It appears, then, that farm people tend not to be aware of the objective requirements of the nonfarm world of work. Yet these are the people who usually provide the effective learning environments for the farm youth. They are the people in whose opinions he trusts. The normal case is to be like those one depends upon. If one's reference groups are satisfied farmers, he will conceive of himself as a farmer-to-be; that is, he will plan to be a farmer. But if he does, he will exhibit the other characteristics typical of his reference groups, including a relatively low awareness of nonfarm occupational requirements.

Differential Reactions to the Effective Environment. The person who must be accounted for is the one who does not plan to farm. The data suggest three kinds of things which may result in planning not to farm. (1) The development of an unusually well-controlled, organized, and inquisitive personality, probably as a consequence of early training; (2) being a son of parents who are comparatively more oriented toward the nonfarm world than is usual; (3) perceiving farming as being an unattainable occupation. The personality data in this study clearly support the first of these points, and data from another source corroborate part of it: Ramsey's study among Wisconsin farm boys shows a personality variable called "self-reliance" to be related to planning not to farm.^{15/} The third point is not so clearly supported by these data. But it is highly plausible, and the one bit of

inferential evidence available is consistent with it: the fewer the number of siblings who could be competitors for the family farm, the greater the probability that the youth will plan to enter farming. This is a relatively accurate assessment of a highly competitive situation. Farms can be bought, but their cost in Lenawee County is many thousands of dollars, so inheritance is the most likely way of gaining one. Moreover, the number of sons of farmers greatly exceeds the number of farms available, even including those that may be rented.

Occupational Self-Conceptions. Probably the early expectation of most farm boys is that they will be farmers someday. That is, since their early vocational self-conceptions appear to be dependent upon what is presented to them in the effective environment, and since in occupations this is nearly exclusively farming, it is to be expected that insofar as they have any occupational self-conception at all, it will be that of the farmer. That is, the farm boy who has no stimulus to grow away from farming maintains and probably strengthens his initial self-concept of farmer-to-be. On the other hand, as time goes on, those who are unusually self-reliant and inquisitive begin to utilize more and more of the occupational information generally available, depending more and more on reference groups beyond the family, and thus begin to perceive new occupational alternatives. Others, those whose parents want them to be more successful than is possible in farming, are consciously trained to look to the nonfarm world for their occupations. Still others begin to look to nonfarm occupations because they believe farming is not accessible to them. The outcome of all three of these is the development of a self-conception as nonfarmer.

Information-seeking Behaviors. In contrast to the effective environment of farm youth, the general environment in Lenawee County is saturated with information relevant for learning about the requirements of the urban-industrial

occupational world. All of the boys in the sample have been exposed to this information in the schools, in Detroit, and in the county's towns and cities. Yet only some of the boys use it. The occupational self-conception appears to be the central factor which determines the extent to which the available information is utilized to raise levels of educational and occupational aspiration. That is, the emerging nonfarm occupational self-conception cannot be actualized without changes in other orientations to the world of work. When a boy plans not to farm he is therefore more attentive to the requirements for success in the nonfarm world. This accounts for the higher levels of educational and occupational aspiration, and for the readiness to utilize opportunities (occupational flexibility), characteristic of those not planning to farm, as well as the more obvious tendency for them to take fewer agricultural courses in school. On the other hand, the boys who see themselves as farmers-to-be simply are not attentive to the available information about the requirements for success in the nonfarm occupational world. This accounts for their generally lower levels of aspiration and for their occupational inflexibility. This is most strikingly shown by the data on beliefs about education needed for farming and for non-farmers. As the table shows, boys who plan not to farm tend to believe that all who plan not to farm need higher education, and boys who plan to farm deny it, yet both groups believe that college or university training is not needed for boys who plan to farm. Clearly, the occupational importance of higher education is more apparent to those who are least identified with farming.

For these reasons, it is hypothesized that the one who plans not to farm is, by virtue of his occupational self-conception, more highly motivated to seek out information which will enable him to be a success in the nonfarm occupational world.

SUMMARY AND CONCLUSIONS

Previous research has shown that farm-reared people tend not to be successful in the urban-industrial occupational world. It has also been shown previously that levels of educational and occupational achievement are positively correlated with levels of educational and occupational aspiration. It has been speculated, therefore, that farm-people tend to have lower levels of educational and occupational aspiration due, presumably, to the lack of information available in most areas. Other previous papers have shown that in the industrial North of the United States the crucial variable is the plan to farm, for all of the apparent relationships of farm residence to low levels of aspiration is accounted for by farm plans.

The present paper has attempted to explore data on farm boys in a rich agricultural and light-industrial county near Detroit in the hope of formulating an explanation for the influence of planning to farm on low levels of aspiration, and the development of the plan to farm itself.

The data have been interpreted as follows. The normal expectation of the farm boy is that he will be a farmer. If nothing disturbs this expectation he will fail to perceive the objective requirements for success in the nonfarm world even though he is being presented with them in a casual way almost daily. If, on the other hand, this expectation is disturbed, and he begins to visualize himself as a nonfarmer, he will utilize the occupational success information being presented to him. At least three different general factors may cause the necessary disturbance of the farm boy's normal expectations to be a farmer: (1) a self-reliant inquisitive personality which frees him from dependence upon his immediate farm groups and their beliefs; (2) farm parents who deviate from the usual in that they teach him to desire occupations other than farming, and (3) the accurate observation that farming is inaccessible to him.

The pivotal element is the self-conception of farmer or nonfarmer. If the explanation is correct, whether or not the available information is used depends upon which self-concept the farm boy develops. Since farms are available only to a fraction of those who plan to farm, it follows that many will have to take nonfarm work. If they do not change their plans before marriage and family intervene

they will undoubtedly enter and remain in the lower levels of the nonfarm occupational world.

If this analysis is correct, and if it is not restricted to the United States, the urban-industrial society which wishes to make fullest effective use of, and give the greatest personal satisfaction to, its excess farm youth will be well-advised to develop occupational counseling techniques specifically designed to rearrange their normal occupational self-concepts. Such counseling measures should be directed particularly at those farm boys who, ^{unrealistically} plan to be farmers. Their main aim should be to make the youth somewhat doubtful of the possibility of entering farming—that is to prevent the development of an inflexible self-conception of farmer-to-be. A change in the self-conception should be sufficient to activate the information-seeking tendencies in the person, thus resulting in increased levels of educational and occupational aspiration.

The quasi-experimental conditions which dictated the selection of Lenawee County are believed to be quite generally relevant for agriculture in other urban-industrial societies. Nevertheless, we cannot be sure that this is true. Moreover, the study is exploratory, yielding hypotheses derived out of data, rather than tested hypotheses. For these reasons the conclusions are tentative. The explanation proposed should be retested under similar conditions in other areas. Moreover, since the explanation concerns the development of occupation self-concepts, it follows that longitudinal research specifically designed to

study the development of occupational self-concepts should be undertaken. In the meantime, experiments in changing occupational self-concepts should be undertaken to see whether in fact they result in the predicted changes in information-seeking behaviors. Finally, this tentative explanation is intended for use among literate farm people of urban-industrial societies. In its present form it probably does not apply to the people of peasant societies. Nevertheless, it may be useful to explore the possibility that differential self-conceptions influence the utilization of occupational information among agricultural people of societies now undergoing industrialization. If self-conceptions are found to perform a similar motivational function under these conditions, it may be that techniques designed to change them can facilitate the development of effective labor forces in such societies.

See Bell, 178 (Lexington, 1945); Ogburn and Scheraga, "Social Mobility in America," *Transactions of the Second World Congress of Sociology*, II, London: International Sociological Association (1951), pp. 67-71; Seymour Martin Lipset, "Social Mobility and Stratification," *Rural Sociology*, 22 (September-December, 1957), pp. 270-288; Ronald Freedson and Deborah Freedson, "Farm-Based Elements in the Modern Population," *Rural Sociology*, 21 (March, 1956), pp. 30-51.

Seymour Martin Lipset, pp. 211.

A. G. Haller, "The Influence of Planning to Enter Farming on Plans to Attend College," *Rural Sociology*, 22 (June, 1957), pp. 137-144; A. G. Haller,

"Research Findings on the Occupational Achievement Levels of Farm-Based People,"

Rural Sociology 23 (December, 1958), pp. 355-363; A. G. Haller and W. H. Sewell,

"Farm Background and Levels of Educational and Occupational Aspirations," *American Journal of Sociology* 66 (January, 1957), pp. 447-461.

FOOTNOTES

*Journal article number 2472 of the Michigan State Agricultural Experiment Station. In part, the research reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education, and Welfare. The writer wishes to acknowledge the invaluable aid of I. W. Miller and the MSU computer and tabulating services, as well as the cooperation of the Lenawee County school officials.

¹ Otto Ammon, Die Gesellschaftsordnung und Ihre Natürlichen Grundlagen, Jena: Verlag von Gustav Fischer (1895), p. 145 (Also see Pitirim Sorokin, Social Mobility, New York: Harper and Brothers, 1927, p. 144 ff and p. 451, and Pitirim A. Sorokin, Carle C. Zimmerman, and Charles C. Galpin, A Systematic Source Book in Rural Sociology, III, Minneapolis: The University of Minnesota Press, (1932, p. 531); Howard W. Beers and Catherine Heflin, Rural People in the City, Kentucky AES Bull. 478 (Lexington, 1945); Gunnar Boalt, "Social Mobility in Stockholm." Transactions of the Second World Congress of Sociology, II, London: International Sociological Association (1954), pp. 67-73; Seymour Martin Lipset, "Social Mobility and Urbanization", Rural Sociology, 20 (September-December, 1955), pp. 220-228; Ronald Freedman and Deborah Freedman, "Farm-Reared Elements in the Nonfarm Population", Rural Sociology, 21 (March, 1956), pp. 50-61.

² Seymour Martin Lipset, op. cit.

³ A. O. Haller, "The Influence of Planning to Enter Farming on Plans to Attend College", Rural Sociology, 22 (June, 1957), pp. 137-144; A. O. Haller, "Research Problems on the Occupational Achievement Levels of Farm-Reared People", Rural Sociology 23 (December, 1958), pp. 355-362; A. O. Haller and W. H. Sewell, "Farm Residence and Levels of Educational and Occupational Aspiration", American Journal of Sociology 62 (January, 1957), pp. 407-411.

⁴William H. Sewell and A. O. Haller, unpublished data on file at the University of Wisconsin Department of Rural Sociology.

⁵One study (A. O. Haller and W. H. Sewell, op. cit.) shows that there is no significant difference in the levels of educational aspiration of nonfarm boys and farm boys who do not plan to farm. Another (A. O. Haller, "The Influence of Planning to Farm on Plans to Attend College", op. cit.) shows that among farm boys, levels of educational aspiration are significantly associated with plans regarding farming.

⁶A. O. Haller, "Research Problems on the Occupational Achievement Levels of Farm-Reared People", op. cit.

⁷A. O. Haller, Occupational Aspiration Scale, East Lansing, Michigan, 1957. Also see I. W. Miller, Jr., "Normalized Data for the O.A.S. Raw Scores," mimeographed paper published by the Social Research Service, Michigan State University (April, 1958).

⁸National Opinion Research Center, "Jobs and Occupation: A Popular Evaluation", Opinion News (September, 1947), pp. 3-13.

⁹R. B. Cattell, The 16 P. F. Test, Form B, Institute for Personality and Ability Testing, 1608 Coronado Drive, Champaign, Illinois (1950).

¹⁰A. O. Haller, The MSU Work Beliefs Check-List, Department of Sociology and Anthropology, Michigan State University (1957).

¹¹R. B. Cattell and A. K. S. Cattell, Test of G - Culture Free-Scale 3A, Institute for Personality and Ability Testing, 1608 Coronado Drive, Champaign, Illinois, (1950).

¹²Sverre Lysgaard, "Social Stratification and the Deferred Gratification Pattern", Transactions of the Second World Congress of Sociology (1954), op. cit., pp. 364-377.

¹⁴Murray A. Straus, "Personal Characteristics and Functional Needs in the Choice of Farming as an Occupation, Rural Sociology 21: 3-4 (September-December, 1956) pp 257-266.

¹⁵Charles E. Ramsey, "Vocational Intentions of Wisconsin Farm Boys," unpublished doctoral dissertation, University of Wisconsin (1952).

¹³See I. W. Miller, "Educational Beliefs and Educational Aspirations of Farm Youth," mimeographed paper published by the Social Research Service, Michigan State University (Oct. 1958).

From the paper: "The Occupational Achievement Process of Farm-Reared Youth in Urban-Industrial Societies,"
by A. O. Haller, Michigan State University.

Table 1. Variables Related and Not Related to Plans Regarding Farming as a Vocation*

<u>Variables Related to Plans Regarding Farming</u>	<u>Variables Not Related to Plans Regarding Farming</u>
A. Personality Variables	
Emotional stability or ego strength (NF) <u>versus</u> dissatisfied emotionality (F). <u>16 P-F T.</u>	Cyclothymia <u>versus</u> schizothymia. <u>16 P-F T.</u>
Adventurous autonomic resilience (NF) <u>versus</u> inherent withdrawn schizothymia (F). <u>16 P-F T.</u>	Dominance or ascendance <u>versus</u> submission. <u>16 P-F T.</u>
Independent self-sufficiency (NF) <u>versus</u> lack of resolution (F). <u>16 P-F T.</u>	Surgey <u>versus</u> desurgency, or depressive anxiety. <u>16 P-F T.</u>
Will control and character stability (NF) <u>versus</u> lack of will control and character stability (F). <u>16 P-F T.</u>	Character or super-ego strength <u>versus</u> lack of internal standards. <u>16 P-F T.</u>
	Emotional sensitivity <u>versus</u> tough maturity. <u>16 P-F T.</u>
	Paranoid schizothymia <u>versus</u> trustful altruism. <u>16 P-F T.</u>
	Hysteric unconcern <u>versus</u> practical concernedness. <u>16 P-F T.</u>
	Sophistication <u>versus</u> rough simplicity. <u>16 P-F T.</u>
	Anxious insecurity <u>versus</u> placid self-confidence. <u>16 P-F T.</u>
	Radicalism <u>versus</u> conservatism. <u>16 P-F T.</u>
	Nervous tension <u>versus</u> lack of nervous tension. <u>16 P-F T.</u>
	General intelligence. <u>C F I Q T.</u>
B. Social Context Variables	
Parental levels of educational aspiration for the youth "high" (NF) <u>versus</u> "low" (F). <u>O P M Y.</u>	Family's socio-economic status (consumption level scale scores) "high" <u>versus</u> "low". <u>O P M Y.</u>
Parental levels of occupational aspiration for the youth "high" (NF) <u>versus</u> "low" (F). <u>O P M Y.</u>	Paternal occupational prestige status "high" <u>versus</u> "low". <u>O P M Y.</u>

183-A

Family's farm tenancy status owner versus renter.
O P M Y.

Best friend's fathers occupational prestige status
"high" versus "low".

Sib group size "small" (F) versus "large" (NF). O P M Y

C. Educational and Occupational Orientations

Evaluation of change positive (NF) versus negative (F)
W B C-L.

Degree of commitment to a particular vocational
choice "high" (F) versus "low" (NF) O P M Y.

Level of college or university educational aspiration
"high" (NF) versus "low" (F) O P M Y.

Level of non-farm occupational aspiration "high" (NF)
versus "low" (F). O P M Y.

Belief that college or university training is needed
(NF) versus not needed by boys not planning to
farm (F). E N F B.

Number of agriculture courses completed in high school
"few" (NF) versus "many" (F). School records.

Orientation to work instrumental versus expressive.
W B C-L.

Evaluation of punctuality positive versus negative.
W B C-L.

Attitude toward migrating positive versus negative.
W B C-L.

Belief that events are determined by external versus
internal forces. W B C-L.

Attitude toward deferring gratification positive
versus negative. W B C-L.

Belief that college or university training is needed
versus not needed by boys planning to farm.
E N F B.

Performance in school subjects "good" versus "poor".
School records.

"Sources of data are abbreviated and italicized following the name of the variable.

Aspects of a variable which characterize those planning to farm are identified by the parenthetical (F): aspects characterizing those not planning to farm are identified by the parenthetical (NF).

Report IV

PEER INFLUENCES ON LEVELS OF OCCUPATIONAL AND EDUCATIONAL ASPIRATION *

A. O. Haller
Michigan State University

C. E. Butterworth
University of Bordeaux

Reprinted from SOCIAL FORCES
Vol. 38, No. 4, May, 1960

In recent years there has been considerable research concerning social factors influencing levels of occupational and educational achievement.¹ Generally these studies assume (1) that occupational and educational achievement are influenced strongly by the person's level of occupational and educational aspiration, and (2) that these levels of aspiration are determined largely by the interpersonal situation within which the individual was socialized.² At least two studies appear to provide evidence supporting the first aspect of this assumption. One of these was recently conducted on boys from a semi-urban county in Wisconsin. High school junior and senior boys were studied in 1948 and re-studied in 1955. Levels of occupational and educational aspiration were measured in the 1948 part of the study, and levels of occupational and educational achievement were measured in the 1955 part of the study.³ In agreement with the first aspect of the assumption, all of these variables were found to be positively intercorrelated. The other study tentatively reaches a similar conclusion. Parsons remarks that the "motivation to mobility" is unexpectedly important among the Boston youth studied by Harvard sociologists.⁴

Other studies provide information on the second aspect of the assumption, that levels of occupational and educational aspiration are correlated with certain elements of the situation within which the person was reared. In one way or another, these all appear to concern the family as the socializing agent.

Many studies have shown that the positions the person occupies as a result of the positions of his family in the larger social system influence his levels of occupational and educational aspiration. For example, some report that levels of occupational and educational aspiration are positively correlated with the position of the family in the class system.⁵ Then, too, there is a certain amount of evidence to show that attitude toward education is correlated with ethnic origin⁶ and that having a high level of educational aspiration is negatively correlated with farm residence of the family.⁷ Besides these, there are a few studies which indicate that factors within the family influence levels of occupational and educational aspiration. For example, Dynes and others have demonstrated that if one has unsatisfactory relations with his parents he is likely to have high levels of occupational aspiration.⁸ Also, it is reported that the degree to which the youth's parents are ambitious for his success influences his level of occupational and educational aspiration.⁹

These studies provide clear evidence of the general adequacy of the assumption that differences in levels of occupational and educational aspiration may be attributed to differences in socialization. Specifically, they identify the family as one source of such differences. But there is a certain amount of information suggesting that there is still another source of variation in levels of occupational and educational aspiration. Building on a long tradition of sociological thinking and observation, Sherif has shown experimentally that attitudes of youth are developed in part as a result of interaction with each other.¹⁰

The general hypothesis of the present study, that interaction with peers influences levels of occupational and educational aspiration of American adolescent boys, is based on this conclusion. Since attitudes are developed in interaction and since a great deal of the interaction of American youth is with others

of the same age, it should follow that levels of occupational and educational aspiration (two types of attitudes) should be partly due to the influence of other youth. Data summarized below, while not conclusive, suggest that the hypothesis may be at least partly tenable.

PROCEDURE

Sample. Data to test the hypothesis were collected from all 17-year old boys in school in Lenawee County, Michigan in the spring of 1957. The test forms and questionnaires were administered by trained social psychologists. In all, 442 persons were questioned. (The sample is somewhat weighted with high aspirers because about 10 percent of the age group had already left school.) Lenawee County offers a good site for such a test. About one-third of its population lives on farms, another one-third are rural-nonfarm, and the last one-third live in Adrian, a city of about 20,000 people, which is the geographic, economic, and administrative center of the county. While there appear to be no sharp breaks in the class structure, a full range of American class levels is present. There are a few wealthy families, a number of professionals, and many families of clerical, skilled, semi-skilled, and unskilled workers. The county is near the Detroit industrial area and has a fairly well-developed light industry itself. This means that the general area has an unusually large variety of occupations visible to youth. There is a small college in Adrian, a university in nearby Toledo, a few colleges and three universities in and around Detroit. Some of these are within daily commuting distance of parts of the county. Hence the area's facilities for higher education are excellent. This affords the youth of the county the possibility of a high degree of exposure to knowledge about advanced education.

Definition of peers. The hypothesis calls for a test situation in which youth may influence one another through direct interaction. Not all youth groups have this characteristic. This means that an adequate test should use only youth who are exceptionally close to each other. In addition to this limitation of the definition, the difficulties of controlling extraneous variables require that subjects be studied two at a time. For these reasons, then, the peer-pair was selected as the unit of analysis. Operationally, the concept is defined for present purposes as a pair of subjects who named each other when asked to list all those they considered to be their best friends.

Control variables. The hypothesis was tested under varying conditions of certain factors which previously have been thought to be influential both in forming close friendships and in the development of levels of occupational and educational aspiration. These factors are: (1) the social class status of the subject's family (SCS); (2) the measured general intelligence of the subject (G); and (3) the degree to which the parents desire high-level social achievement for the subject (PAD). These variables are not the only ones which could have been controlled, but they probably are the most important. Social class status and measured intelligence have both been shown to be correlated with levels of occupational and educational aspiration.¹¹ Social class status doubtless influences the choice of friends, and one may guess that general intelligence does also. As noted earlier, the degree to which the parents desire high-level achievement for the youth has been reported to influence his level of aspiration.¹² This attitude may also influence the peer associations of young people; parents often control the friendships of their children.

The effects of the control variables were minimized by classifying each peer-pair according to the level of each member on each control variable. This was accomplished by dividing each of the control variable scores into three equal-

sized groups of persons, high, middle, and low; and then by classifying peer-pairs according to the level of both members. Thus for each control variable there are pairs in which (1) both members are high (HH); (2) one member is high and the other is middle (HM), (3) one is high and the other is low (HL); (4) both are middle (MM); (5) one is middle and the other low (ML); and (6) both are low (LL). This process was repeated for each control variable, resulting in six categories of peer-pairs for each control variable. The sub-sample sizes are complex because there is no necessary relation between the number of peer-pairs and the number of persons. In some instances a person appears in more than one pair because he may name and be named by more than one person. Moreover a given person may appear in more than one category of peer-pairs. Over all there are six groups of peer-pairs for each of the three control variables for each of the two types of aspiration. This pattern is presented in Table 1, which includes the subsample sizes for peer-pairs (regular type) and for persons (*italic type*), and the mean aspiration scores (parentheses). The total sample size was reduced to 245 persons, largely because many were not members of peer-pairs as the concept is operationally defined.¹³

Variables. The dependent variables of the study are level of occupational aspiration and level of educational aspiration. Level of occupational aspiration was measured by scores on the Occupational Aspiration Scale (OAS).¹⁴ The OAS consists of eight questions, in each of which the subject is instructed to select one of ten alternative occupations. The eight questions are designed to tap the person's realistic and idealistic levels of aspiration at each of two career periods, initial and mature. In questions referring to realistic levels the subject is instructed to choose the job "I'm sure I can get," while in questions referring to idealistic levels he is instructed to choose "the job I'd prefer if I had my choice." In questions referring to the initial career

period the subject is instructed to choose a job for the time "when my schooling is finished," while in questions referring to the mature career period he is instructed to choose a job for the time "when I'm 30 years old." Each question simultaneously taps one level and one career period. This means that four questions exhaust all the possible combinations. This number is doubled by repeating each question once, to give the total of eight questions.

Eighty appropriate occupations, taken from the NORC study of the prestige of 90 occupations,¹⁵ were distributed among the 8 questions, 10 occupations per question. The highest prestige occupation is in Question 1, the second highest is in Question 2, and so on down to the 80th which is in Question 8. Thus the alternatives for each question systematically span the entire range of occupational prestige. On any one question a person scores zero points if he chooses the lowest-ranked occupation, or up to nine points if he chooses the highest-ranked. The highest possible score is 72 and the lowest possible score is zero. In this study the mean OAS score is 36.2 and the standard deviation is 13.0. The 28 intercorrelations of the question scores range from + .238 to + .460 ($r \geq .155$ is significant beyond the .001 level).

Level of education aspiration. This was measured by a series of questions concerning the number of years of college or university training each subject planned to complete. In preliminary studies it has been found to be impossible to measure distinctions as fine as one year among boys of this age. For this reason the subjects were asked to estimate within two years the total number of years they planned to attend college. Possible scores on this index, therefore, were zero, two, four, six, and eight. These may be roughly interpreted as the number of years the subjects plan to attend college, but they are more accurately interpreted simply as differential levels of educational aspiration.

The control variables are social class status (SCS), measured general intelligence (G), and the degree to which the parents desire high-level achievement for the youth (PAD). The SCS scores consist of actual or interpolated prestige ratings of the subjects' fathers' occupations based upon the NCRC study.¹⁶ The G scores were measured by the Cattells' Test of G Culture Free, which is relatively free of social class bias in measured intelligence.¹⁷ Raw scores rather than the Cattells' "IQ" scores were used. The PAD scores consist of the sum of scored responses to questions the subject was asked about the degree to which his parents "encouraged" him to continue his education and quality of the occupation his parents wanted for him. Four questions were used, one for occupation and one for education, each asked one for each parent. The answers to each question were assigned arbitrary scores from zero to four, depending upon which of the five ranked alternatives the subject believed to be the most accurate representation of his parents' ambition for him. The total scores could vary from zero to 16.

It will be recalled the peer-pair is the unit of analysis, and that the pairs were grouped according to each member's score on each control variable. The cutting points for the control variables were determined by ranking all the persons for whom data were available, and then dividing the persons into three equal-sized groups: High, Middle, and Low thirds. (As shown above, this classification of individuals into equal-sized control variable groups does not imply that the paired control variable groups--HH, HM, etc.--will also contain equal numbers of peer-pairs.) In the few instances where the cutting points fall within a score rather than between scores, the persons with that score were arbitrarily assigned to one of the appropriate categories. The scores defining category boundaries are as follows: SCS--High: 88 to 73 points; Medium: 73 to 60 points; Low: 60 to 35 points; G--High: 33 to 24 points; Medium:

4

23 to 19 points; Low: 19 to 6 points; PAD--High: 16 to 14 points; Medium: 14 to 10 points; Low: 10 to 6 points. These boundaries were adhered to even where some persons were dropped for a particular calculation.

Statistical Technique. The hypothesis was tested by computing the intraclass correlation (R) of the levels of aspiration of pairs of persons for each category of SCS, G and PAD, and for each type of aspiration.¹⁸ The hypothesis may be rejected unequivocally if all intraclass correlations are zero or negative, or if all intraclass correlations for any one control variable are zero or negative. A large proportion of zeroes or negatives will tend to reject the hypothesis. On the other hand, the hypothesis may be accepted tentatively if all or most intraclass correlations are positive. The case of positive correlation means that, irrespective of their SCS, G, or PAD similarities or differences, boys who choose each other as best friends tend to have similar levels of occupational and educational aspiration.

RESULTS

The tests of the hypothesis are presented in Table 2. Similarly to Table 1, the cells are defined by SCS, G, PAD categories of peer-pairs and by levels of occupational aspiration and educational aspiration. There are a total of 36 tests of the hypothesis, one for each of the six categories of peer-pairs (HH, HM, etc.) by each of three control variables, by each of two types of aspiration. The figure in each cell is the intraclass correlation coefficient (R), the correlation of levels of aspiration of pairs of persons who choose each other as best friends.

In general, the table shows that 17 of the 18 R's concerning levels of occupational aspiration are positive, while 14 of the 18 R's concerning levels of educational aspiration are positive. Some of these are low: ten are either

negative or are less than $R = + .10$. The negative R's tend to be concentrated among the tests regarding levels of educational aspiration. Also, the mean R for levels of educational aspiration ($\bar{R} = + .19$) is considerably lower than the mean R for levels of occupational aspiration ($\bar{R} = + .31$).¹⁹ (Both of these facts are consistent with the findings of previous research, which appear to show that level of educational aspiration is not as stable a variable as is level of occupational aspiration.²⁰) Other than the fact that there are more negative R's in the educational aspiration side of the table, there is no striking pattern among the R's tending to reject the hypothesis. But there is a tendency toward a pattern in the most crucial categories of the control variables. The most rigorous tests of the hypothesis are among pairs formed of persons of different SCS, G and PAD scores. There are 18 tests on peer-pairs whose members differ from each other on the control variables (peer-pairs of HM, HL, or ML). Four of the five negative R's appear in these categories, and three of the five R's of less than $+ .10$ are also in these categories. Conversely, among the 18 tests on pairs whose members are similar to each other (HH, MM, and LL) there is only one negative R and only two R's of less than $+ .10$. This means that most of the evidence tending to reject the hypothesis appears among the categories of control variables which are the most stringent tests. In these categories there are a total of seven out of 18 outright rejections or near-rejections. On the other hand, in 11 out of 18 of the crucial categories, the evidence favors accepting the hypothesis.

Thus, the results of the analysis are somewhat inconsistent. Regarding level of occupational aspiration, there are only about four very low or negative R's, and these are unsystematically scattered throughout the tests. Moreover, the mean intraclass correlation of $\bar{R} = + .31$, though low, shows that, on the average, there is a degree of variance in levels of occupational aspiration

shared by boys who choose each other as best friends. On the other hand, in some states of the control categories, the intraclass correlations are moderately high. For example, among boys who are both of high social class status $R = + .646$. For these reasons, it is concluded that these data are probably not sufficient to reject the aspect of the hypothesis which holds that peers tend to influence each others' levels of occupational aspiration. But the evidence is not conclusive.

The evidence regarding level of educational aspiration is even more tenuous. There are about six very low or negative R's, and the mean intraclass correlation of $\bar{R} = + .19$ is quite low. Yet, here again, there are some moderately high intraclass correlations such as the $R = + .565$ found among boys who are both of low social class status. In general, however, it is concluded that the data are probably sufficient to warrant tentative rejection of the aspect of the hypothesis which holds that peers tend to influence each others' levels of educational aspiration. But here, too, the evidence is not conclusive.

CONCLUSION

Thus the results regarding the hypothesis that interaction with peers influences level of occupational and educational aspiration are not conclusive. The hypothesis was tested under varying conditions of parental social class status, peer-pair members' general intelligence, and parental desire for high-level social achievement for the youth. As predicted by the hypothesis, a positive intraclass correlation of close friends' levels of occupational and educational aspiration was found in most of the tests. This holds, but with less certainty, even under most of the more rigorous of the varying conditions. The evidence regarding the hypothesis appears to provide a small degree of support

for the aspect referring to levels of occupational aspiration, but it appears to provide little or no support for the aspect referring to levels of educational aspiration. But because experimental research has produced the same generic phenomenon ²¹ and because the weight of the nonexperimental evidence presented here tends to support at least one aspect of it, the writers believe that the hypothesis is at least partially accurate. Nevertheless, the tenuous evidence presented, together with the possibility that youth might choose each other because of their similar levels of occupational or educational aspiration, suggests the need for experimental studies in which levels of occupational and educational aspiration are changed by arbitrary manipulation, and for longitudinal studies in which changes in levels of aspiration occur with changes in friendship patterns. This must be done before either aspect of the hypothesis can be considered to be more than tentatively established.

Levels of Aspiration: Some Aspects
Sociological Review, 12 (April 1956), pp. 212-235; Lester T. Soper, "Social Class and Occupational Aspirations: A Comparison of Absolute and Relative Measurements," *American Sociological Review*, 21 (December 1956), pp. 703-709; Ronald Freedman and Robert Freedman, "Farm-Born Elements in the Non-Farm Population," *Rural Sociology*, 23 (March 1956), pp. 50-61; A. O. Haller, "Research Problems on the Occupational Aspiration Levels of Farm-Born People," *Rural Sociology*, 23 (December 1956), pp. 355-362; A. O. Haller, "The Influence of Planning to Enter Farming on Plans to Attend College," *Rural Sociology*, 22 (June 1957), pp. 137-141; A. O. Haller and W. H. Sewell, "Farm Residence and Levels of Educational and Occupational Aspiration," *American Journal of Sociology*, 62 (January 1957), pp. 401-411; H. A. Kahl, "Educational and Occupational Aspirations of 'Common Man' Boys," *Harvard Educational Review*, 23 (Summer 1953), pp. 186-203; Robert Arvey, and E. L. Loutitt, "The Influence of Father's Occupation on the Vocational Choices of High School Boys," *Journal of Applied Psychology*, 19 (April 1954), pp. 205-211; Seymour Martin Lipset, "Social Mobility and Urbanization," *Rural Sociology*, 20 (September-December 1955), pp. 226-228; T. M. Livesey, "Past, Present and Future Vocation of High School Seniors in Hawaii," *Journal of Applied Psychology*, 25 (December 1941), pp. 679-686; T. M. Livesey, "Past, Present and Future College Expectation of High School Seniors in Hawaii," *Journal of Vocational Research*, 35 (January 1942), pp. 334-337; Raymond A. Mulligan, "Social Mobility and Seymour Yellin, "The Protestant Ethic, Level of Aspiration, and Social Mobility: An Empirical Test," *American Sociological Review*, 26 (June 1961), pp. 235-300; Raymond A. Mulligan, "Socio-Economic Background and Vocational Enrollment," *American Sociological Review* (April 1961), pp. 17-27; Raymond A. Mulligan, "Levels of Aspiration and Social Class," *American Sociological Review*, 18 (June 1953), pp. 231-242; William H. Sewell, "Social Status and Educational Aspiration," *Sociological Review*, 22 (February 1957), pp. 67-73; Joseph W. Wilson, "The

FOOTNOTES

*The research reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare in cooperation with the Michigan State Agricultural Experiment Station, of which this is Journal article number 2345. The writers wish to acknowledge the cooperation of the school officials of Lenawee County, Michigan, and the computing service of the Michigan State University Department of Statistics, as well as the research assistance of Arturo DeHoyos, Carole Ellis Wolff, and Jeanette Jennings.

¹Philip J. Allen, "Childhood Background of Success in a Profession," American Sociological Review, 20 (April 1955), pp. 186-190; Howard W. Beers and Catherine Heflin, Rural People in the City, Kentucky AES Bulletin 478 (Lexington) 1945; Ralph F. Berdie, After High School--What? (Minneapolis) University of Minnesota Press (1954); Ralph F. Berdie, "Why Don't They Go To College?" Personnel and Guidance Journal, 31 (March 1953), pp. 352-356; Gunnar Boalt, "Social Mobility in Stockholm," Transactions of the Second World Congress of Sociology, II (London) International Sociological Association (1954), pp. 67-73; William Arthur Bradley, Jr., "Correlates of Vocational Preferences," Genetic Psychology Monographs, 28 (1943), pp. 99-169; Ely Chinoy, "Social Mobility Trends in the U. S.," American Sociological Review, (April 1955), pp. 180-186; R. R. Dynes, et al., "Levels of Occupational Aspiration: Some Aspects of Family Experiences as a Variable," American Sociological Review, 21 (April 1956), pp. 212-215; LaMar T. Empey, "Social Class and Occupational Aspiration: A Comparison of Absolute and Relative Measurement," American Sociological Review, 21 (December 1956), pp. 703-709; Ronald Freedman and Deborah Freedman, "Farm-Reared Elements in the Non-Farm Population," Rural Sociology, 21 (March 1956), pp. 50-61; A. O. Haller, "Research Problems on the Occupational Achievement Levels of Farm-Reared People," Rural Sociology, 23 (December 1958), pp. 355-362; A. O. Haller, "The Influence of Planning to Enter Farming on Plans to Attend College," Rural Sociology, 22 (June 1957), pp. 137-141; A. O. Haller and W. H. Sewell, "Farm Residence and Levels of Educational and Occupational Aspiration," American Journal of Sociology, 62 (January 1957), pp. 407-411; J. A. Kahl, "Educational and Occupational Aspirations of 'Common Man' Boys," Harvard Educational Review, 23 (Summer 1953), pp. 186-203; Robert Kroger, and C. M. Loutitt, "The Influence of Father's Occupation on the Vocational Choices of High School Boys," Journal of Applied Psychology, 19 (April 1935), pp. 203-212; Seymour Martin Lipset, "Social Mobility and Urbanization," Rural Sociology, 20 (September-December 1955), pp. 220-228; T. M. Livesay, "Test Intelligence and Future Vocation of High School Seniors in Hawaii," Journal of Applied Psychology, 25 (December 1941), pp. 679-686; T. M. Livesay, "Test Intelligence and College Expectation of High School Seniors in Hawaii," Journal of Educational Research, 35 (January 1942), pp. 334-337; Raymond W. Mack, Raymond J. Murphy and Seymour Yellin, "The Protestant Ethic, Level of Aspiration, and Social Mobility: An Empirical Test," American Sociological Review, 21 (June 1956), pp. 295-300; Raymond A. Mulligan, "Socio-Economic Background and College Enrollment," American Sociological Review (April 1951), pp. 188-196; Leonard Reissman, "Levels of Aspiration and Social Class," American Sociological Review, 18 (June 1953) pp. 233-242; William H. Sewell, Archie O. Haller, and Murray A. Straus, "Social Status and Educational and Occupational Aspiration," American Sociological Review, 22 (February 1957), pp. 67-73; Joseph Stubbins, "The

FOOTNOTES
(cont'd.)

Relationship Between Level of Vocational Aspiration and Certain Personal Data," Genetic Psychology Monographs, 41 (1950), pp. 327-408; R. M. Stephenson, "Mobility Orientation and Stratification of 1,000 Ninth Graders," American Sociological Review, 22 (April 1957), pp. 204-212.

²See, for example, Talcott Parsons, "A Revised Analytical Approach to the Theory of Social Stratification," in Reinhard Bendix and Seymour Martin Lipset, eds., Class, Status and Power: A Reader in Social Stratification (Glencoe, Illinois: The Free Press, 1953), p. 127; Seymour M. Lipset, op. cit., A. O. Haller, "Research Problems on the Occupational Achievement Levels of Farm-Reared People," loc. cit., A. O. Haller and W. H. Sewell, loc. cit., and A. O. Haller, "Planning to Farm: A Social Psychological Interpretation," Social Forces, 37 (March 1959), pp. 263-268.

³Unpublished data from Jefferson County, Wisconsin, on file with W. H. Sewell, Department of Rural Sociology, University of Wisconsin. Parts of these data have been reported in A. O. Haller, "Research Problems on the Occupational Achievement Levels of Farm-Reared People," loc. cit.

⁴"A Revised Analytical Approach to the Theory of Social Stratification," loc. cit.

⁵Philip J. Allen, loc. cit., J. A. Kahl, loc. cit., R. Kroger and C. M. Loutitt, loc. cit., R. A. Mulligan, loc. cit., L. Riessman, loc. cit., W. H. Sewell, A. O. Haller, and M. A. Straus, loc. cit.

⁶James A. Duncan and Burton W. Kreitlow, "Selected Cultural Characteristics and the Acceptance of Educational Programs," Rural Sociology 19 (December 1954), pp. 349-357; W. H. Sewell, et al., "Factors Associated with Attitude toward High School Education in Rural Wisconsin," Rural Sociology, 18 (December 1953), pp. 359-365.

⁷A. O. Haller and W. H. Sewell, loc. cit., A. O. Haller, "Research Problems on the Occupational Achievement Levels of Farm-Reared People," loc. cit.

⁸R. R. Dynes, et al., loc. cit.

⁹J. A. Kahl, loc. cit., A. O. Haller, "Planning to Farm: A Social Psychological Interpretation," op. cit.

¹⁰Muzafer Sherif, "A Study of Some Social Factors in Perception," Archives of Psychology, 187 (1935). This and later studies have been summarized in Muzafer Sherif and Caroline W. Sherif, An Outline of Social Psychology (rev. ed.; New York: Harper and Brothers, 1956), pp. 280-331.

FOOTNOTES
(cont'd.)

¹¹See W. H. Sewell, A. O. Haller, and M. A. Straus, loc. cit., for tests of both hypotheses and for a review of literature.

¹²J. A. Kahl, loc. cit., and A. O. Haller, "Planning to Farm: A Social Psychological Interpretation," loc. cit.

¹³It will be noted in Table 1 that the trends in mean aspiration scores by control variables follow the patterns predicted from previous research: in general, levels of occupational and educational aspiration increase with increases in SCS, G, and PAD scores. This confirms the utility of the control variables.

¹⁴A. O. Haller, Occupational Aspiration Scale (East Lansing, Michigan, 1957). Also see I. W. Miller, Jr., "Normalized Data for the OAS Raw Scores," mimeographed paper published by the Social Research Service of Michigan State University (East Lansing, Michigan, April 1958).

¹⁵National Opinion Research Center, "Jobs and Occupations: A Popular Evaluation," Opinion News, 9 (September 1947). Reprinted in Bendix and Lipset, op. cit., pp. 411-426.

¹⁶Ibid.

¹⁷R. B. Cattell and A. K. S. Cattell, Test of G--Culture Free--Scale 3A, Institute for Personality and Ability Testing (1608 Coronado Drive, Champaign, Illinois, 1950). Also see Institute for Personality and Ability Testing, Handbook for the Individual or Group Culture Free Intelligence Test (1602 Coronado Drive, Champaign, Illinois, n.d.).

¹⁸All intraclass correlation coefficients (R) were calculated from the formula, $[1 + R(K-1)] \sigma^2 = K\sigma^2_m$, in G. Udny Yule and M. G. Kendall, An Introduction to the Theory of Statistics (13th ed. rev.; London: Charles Griffin and Company, Ltd., 1949), p. 256. See also Ernest A. Haggard, Intraclass Correlation and the Analysis of Variance (New York: The Dryden Press, Inc. 1958). Tests of significance were not used because there appear to be none available for this specific problem.

¹⁹A recent unpublished study shows a similar degree of intraclass correlation ($R = + .33$) of OAS scores of intact sociometric clique members among boys 17 years old in a small city high school in Central Michigan. See Irwin W. Miller, "Occupational Aspiration, V-Achievement, and Peer Group Membership" (unpublished manuscript, Department of Sociology and Anthropology, Michigan State University, 1959).

FOOTNOTES
(cont'd.)

²⁰ This was found to be the case in the unpublished Jefferson County, Wisconsin data cited in footnote 3 above. The correlation coefficients from the latter study have been reported in A. O. Haller, "Research Problems on the Occupational Achievement Levels of Farm-Reared People," loc. cit.

²¹ Muzaffer Sherif, loc. cit.

Categories of Control Variables	Level of Aspiration Scores (OAS Scores)			
	Control Range Per			
	SCB	G	PAD	SCB
HI	35 12 (45.09)	47 24 (55.98)	36 24 (55.62)	28 12 (40.00)
HJ	35 12 (47.28)	31 24 (43.59)	47 22 (53.77)	28 12 (40.00)
HL	35 63 (35.84)	31 53 (37.75)	24 48 (35.42)	28 12 (40.00)
HM	28 47 (37.40)	25 40 (39.00)	28 28 (47.00)	28 12 (40.00)
ML	45 72 (35.62)	43 75 (48.99)	40 42 (41.00)	28 12 (40.00)
IL	28 44 (33.29)	30 43 (37.97)	28 42 (35.00)	28 12 (40.00)
Totals.....	207 244	207 242	207 242	207 242

* The number of pair-pairs is in parentheses (the number of pairs is underlined), and the total number of persons is in brackets. The number of persons is not proportional to the number of pair-pairs, since some persons may be a member of more than one pair.

Table 1

Mean Level of Aspiration Scores, Number of Peer-Pairs, and Number of Subjects,
By Type of Aspiration and by Control Variable Categories *

Categories of Control Variables	Type of Aspiration					
	Level of Occupational Aspiration (OAS Scores)			Level of Educational Aspiration (Approx. years of college)		
	Control Variables					
	SCS	G	PAD	SCS	G	PAD
HH	35 51 (45.03)	47 54 (45.98)	36 54 (45.62)	31 45 (4.26)	43 52 (4.38)	34 50 (4.44)
HM	35 56 (42.28)	31 54 (43.59)	47 72 (43.77)	30 50 (3.64)	25 44 (3.62)	35 53 (3.88)
HL	36 63 (35.84)	31 53 (37.75)	24 44 (34.61)	33 57 (2.80)	25 43 (2.54)	21 39 (2.66)
MM	28 47 (37.40)	25 40 (39.00)	20 38 (40.07)	23 41 (2.28)	22 34 (2.16)	18 34 (2.94)
ML	45 72 (36.62)	43 75 (34.29)	40 67 (31.50)	39 58 (2.06)	37 66 (2.02)	37 62 (1.18)
LL	28 44 (33.29)	30 43 (29.97)	23 37 (31.10)	23 39 (1.48)	26 37 (1.24)	22 35 (1.30)
Totals.....	207 244	207 245	190 234	179 213	178 210	167 199

*The number of peer-pairs is in regular type, the number of persons composing the pairs is underlined, and the mean aspiration scores are in parentheses. The number of persons is not proportional to the number of pairs because the same person may be a member of more than one pair.

Table 2

Intraclass Correlation (R) of Peer-Pairs' Levels of Occupational and Educational Aspiration, by Categories of SCS, G, and PAD Control Variables

Categories of Control Variables	Type of Aspiration					
	Level of Occupational Aspiration (OAS Scores)			Level of Educational Aspiration (Approx. years of college)		
	Control Variables					
	SCS	G	PAD	SCS	G	PAD
HH	.646	.405	.351	.322	.130	.194
HM	.483	.324	.344	.392	.259	.114
HL	.484	-.054	.348	.192	-.075	-.108
MM	.380	.288	.513	-.011	.379	.470
ML	.005	.123	.063	.083	.210	-.163
LL	.329	.560	.047	.565	.079	.299

level of occupational aspiration (LOA) have been administered to samples of youth in Wisconsin (1948) and Michigan (1957). The product-moment correlation among prestige ratings of the responses are uniformly positive and high in both samples. Moreover, the magnitude of the correlation between each pair of questions varies only slightly between the two samples, showing that the relationship among the various indicators of LOA is stable. Factor analysis shows that the two matrices share two factors. These are identified as "general LOA" and "realistic LOA." Techniques for assessing and weighting these factors are suggested.

Report V

THE FACTORIAL STRUCTURE OF LEVEL OF OCCUPATIONAL ASPIRATION*

by

A. O. HALLER
Michigan State University

Wm. H. SEWELL
University of Wisconsin

I. W. MILLER
Michigan State University

Abstract

Five occupational choice questions designed to measure different aspects of level of occupational aspiration (LOA) have been administered to samples of youth in Wisconsin (1948) and Michigan (1957). The product-moment correlation among prestige ratings of the responses are uniformly positive and high in both samples. Moreover, the magnitude of the correlation between each pair of questions varies only slightly between the two samples, showing that the relationship among the various indicators of LOA is stable. Factor analysis shows that the two matrices share two factors. These are identified as "general LOA" and "realistic LOA." Techniques for assessing and weighting these factors are suggested.

THE FACTORIAL STRUCTURE OF LEVEL OF OCCUPATIONAL ASPIRATION*

(1) The occupations which I have thought about going into are:

The prestige level of the occupations a young person reports that he has considered as possibilities for his life work (or level of occupational aspiration, henceforth to be referred to as LOA) has emerged recently as a social psychological variable apparently influencing the level of occupational attainment in later years.¹ Considering the amount of present concern with the concept, it is important that the magnitude and inter-sample stability of the correlations among various techniques for measuring it be investigated. The purpose of this note is to present the results of an analysis of the internal structure of a battery of questions designed to obtain information on various aspects of occupational aspiration for two comparable samples of high school youth.

Data. The data presented in this report were taken from two counties in the North Central region of the United States, each near a major city. Each is connected by excellent transportation and communication systems to its metropolis, and is roughly thirty to fifty miles from it. Thus youth in each area have ready access to the excellent occupational and educational facilities characteristic of urban-industrial society. One is Jefferson County, Wisconsin, between Madison and Milwaukee, and the other is Lenawee County, Michigan, approximately 40 miles southwest of Detroit, and less than 20 miles northwest of Toledo, Ohio. Data were taken from the former in 1948, and from the latter in 1957. The different measures of LOA are actual and interpolated North-Hatt ratings² of the occupations named by high school students in response to a battery of four occupational choice questions.

In the Wisconsin project, the 431 junior and senior boys in all high schools in the county filled out a questionnaire which included the following questions:

are identical in the two projects. For the maturity level question, the Michigan

(1) The occupations which I have thought about going into are:

a. _____

b. _____

c. _____

d. _____

(2) The occupation that I plan to follow is: _____

(3) If I were absolutely free to go into any kind of work I wanted, my choice would be: _____

(4) The type of work I would like to be doing 10 years from now is: _____

Forty-four of the boys in the Wisconsin sample failed to give responses which could be coded. North-Hatt scores were assigned to the responses of each of the remaining 387 boys. There were five North-Hatt scores for each boy as follows: (1) the prestige level of the highest occupational choice indicated in the answer to any of the questions, (2) the prestige level of the lowest occupational choice, indicated in the answer to any of the questions, (3) the prestige of the plan level was coded from the answer to question two, (4) the free choice level was based on the response to question three, and (5) the maturity choice level was based on the answer to question four. The lowest and plan levels are commonly considered to be occupational realism measures, and the highest and free levels are frequently considered to be occupational fantasy measures.

In the Michigan project, each of the 442 seventeen-year-old boys (largely Juniors and Seniors) in school in the county was asked all of the same questions used in the Wisconsin study. Except for the maturity level, all questions and coding techniques are identical in the two projects. For the maturity level question, the Michigan

study substituted the words "by the time I am 30 years old," for "10 years from now." Seventy-seven of the Michigan boys failed to give responses which could be assigned North-Hatt scores, leaving a useable sample of 365 boys.

Findings. The five LOA responses produced by the above procedures were then intercorrelated, producing separate matrices for the Wisconsin and Michigan data. These results are shown in Table 1. Two observations about the table are noteworthy. First, all corresponding correlation coefficients in the two matrices are

(Table 1 about here)

strikingly similar in magnitude. In fact, the average difference between the corresponding correlation coefficients for the Wisconsin and the Michigan samples is less than .05. This holds despite the fact that data for the two matrices were taken nine years apart on boys of slightly different ages in two different areas of the North Central Region of the United States. The obvious conclusion to be drawn is that the intercorrelation of responses of different groups of students to the same set of open-ended occupational choice questions is remarkably stable.

Second, within each matrix the intercorrelations are almost all high, ranging from +.42 to +.82. Only one variable, the level of the lowest choice, (X_1), is relatively low in its correlation with other variables. Contrary to what would be expected on the basis of the recent tendency to de-emphasize the youth's higher level choices,³ the plan level (X_2) is no more highly correlated with the other variable thought to be measuring the "realistic" level (X_1) than it is with the variables considered to be measures of higher or "fantasy" levels (X_3) and (X_4). Finally, all three of the remaining variables, the highest level choice (X_3), the free choice level (X_4), and the maturity choice level (X_5), are highly correlated with each other and with (X_1) and (X_2). Hence, with the possible exception of (X_1), it appears that any of these five ways of measuring the prestige level of the occupational choices of youth would provide a usable although crude measure of LOA.

This expectation was tested by a varimax factor analysis⁴ of each of the two correlation matrices. The highest correlation coefficient in each column was used as an estimate of the communality. Three factors were extracted from each matrix and were rotated orthogonally. These account for 99 percent of the total variance in each matrix. The rotated^{factor} matrices are presented in Table 2. In the Wisconsin (Table 2 about here)

matrix only Factors V_1 and V_2 are of any importance. These account for 62 and 36 percent of the total variance, while Factor V_3 accounts for but one percent. In the Michigan matrix all three factors are important. They account for 61, 22, and 17 percent of the total variance respectively. Arbitrarily, a loading of .45 was selected as the cutting point to use in interpreting the factors. In both matrices Factor V_1 has loadings above .45 on all variables except the lowest choice level (X_1). It is therefore identified as general LOA. Again in both matrices, Factor V_2 has loadings of more than .45 only on the lowest choice level (X_1) and the plan level (X_2). Thus, having substantial loadings on both of the realism variables and having low loadings on the highest choice, the free choice and the maturity variables, it is identified as realistic LOA. Evidently it isolates a tendency for some persons to have lower minimum level choices, irrespective of their general LOA levels. Factor V_3 is not interpretable in the Wisconsin matrix. In the Michigan matrix, the highest choice level (X_3) is the only variable having a loading greater than the .45 cutting point on factor V_3 . Consequently, it is dangerous to label it; if it means anything at all, it is the exact opposite from V_2 in that it isolates a tendency for some persons to have quite high maximum level choices independently of their general or realistic LOA.

In general the factor analysis indicates that there are two (possibly a third but the evidence is not compelling) types of LOA which vary independently of each other. These are "general LOA", and "realistic LOA."

These findings are suggestive in two areas. First, general LOA is the main factor measured by the questions used in this study to elicit the plan level (X_2), the highest choice level (X_3), the free choice level (X_4), and the maturity choice level (X_5). In turn, this information indicates that the common assumption that questions dealing with the actual vocational plan are better indicators of general LOA than are other types of questions about occupational aspirations is invalid for the present samples. Each of several variables is a good, but imperfect measure of general LOA. It follows that an index based on responses to each type of question should be a better measure than responses to any single type of question, including the one eliciting the plan level. Research workers wishing to use a factor weighted index for scoring respondents to this set of LOA questions may easily do so by multiplying the factor weight of the first variable on general LOA by the respondent's score on that variable and dividing by the standard deviation of the variable, then doing the same thing for each of the other variables, and summing the results.⁵ Since the factor loadings seem to vary slightly among samples, and since the degree to which present findings hold under different conditions is not known, it is recommended that new factor loadings be computed on the data taken from any new samples studied rather than from the data in Table 2. Secondly, realistic LOA is a second factor measured by some of the questions used in this research, notably those tapping the lowest choice level (X_1) and the plan level (X_2). So far as the writers know, this factor has not been reported previously. It bears a superficial resemblance to Stephenson's "plan level"⁶ but it is not the same thing. Table 2 shows that the plan level (X_2), as measured in the research reported here, is not the best single measure of the factor; the lowest choice level (X_1) has this distinction. Besides, the plan level (X_2) is heavily saturated with general LOA. The realistic LOA factor (V_2) seems to distinguish between those persons whose lower levels of occupational aspiration are

especially low, and those whose lower levels of occupational aspiration are rather high and these are quite independent of their general LOA. The antecedents and consequences of general LOA are becoming well understood and seem to be proving quite useful.⁷ Perhaps similar research on the antecedents and consequences of the realistic LOA factor would also prove fruitful. For research needing such a measure, a factor-weighted realistic LOA score may be based upon the factor loadings of each variable on V_2 in a manner similar to that noted above for general LOA (V_1). Again, the writers believe that such scores should be computed afresh for new samples, rather than using either set of V_2 loadings presented in Table 2.

Summary and Conclusion. Comparable LOA (Level of occupational aspiration) data collected nine years apart in two different areas, have been presented. They show that several different measures of LOA are quite highly intercorrelated, and that the degree of correlation among them is stable despite differences in time and location. Two orthogonal factors, named "general LOA" and "realistic LOA," appear in both samples. These findings make dubious the recent distinction between the so-called "plan levels" and "aspiration levels." Instead they show that the plan level of LOA is a substantial contributor to general LOA. The second type of LOA ("realistic") found in these data appears not to have been reported in previous literature. This type is most heavily saturated with the lowest choice a person reports, and it also has heavy loadings on the plan level. Research should be undertaken to discover what importance, if any, this factor has for occupational choice behavior.

In general, future research should attempt to repeat under other conditions, particularly in more highly urbanized areas, the steps reported in this paper. If the present findings are confirmed, general LOA may be more adequately measured by combining the scores of the responses to the several different LOA questions into a single index, rather than depending on the response to a single question, such as the person's stated occupational plan, as has often been done in the past.

Table 1. CORRELATION MATRICES OF NORTH-HATT RATINGS OF OCCUPATIONAL CHOICES*

	Lowest Level	Plan Level	Highest Level	Free Level	Maturity Level
Variables	X ₁	X ₂	X ₃	X ₄	X ₅
Wisconsin 1948 (N=387)					
X ₁ : Lowest	-	.68	.42	.56	.56
X ₂ : Plan	.68	-	.64	.76	.80
X ₃ : Highest	.42	.64	-	.72	.72
X ₄ : Free	.56	.76	.72	-	.82
X ₅ : Maturity	.56	.80	.72	.82	-
Michigan 1957 (N=365)					
X ₁	-	.55	.43	.46	.46
X ₂	.55	-	.62	.73	.75
X ₃	.43	.62	-	.72	.67
X ₄	.46	.73	.72	-	.82
X ₅	.46	.75	.67	.82	-

*All signs are positive. All figures are product-moment correlations.
 $r \pm .11 > P \leq .05$

Table 2. ROTATED FACTOR MATRICES

FOOTNOTES

Variables	Factors					
	Wisconsin (1948)			Michigan (1957)		
	V ₁	V ₂	V ₃	V ₁	V ₂	V ₃
X ₁ : Lowest	.30	.77	.04	.30	.65	.19
X ₂ : Plan	.64	.64	-.04	.70	.47	.19
X ₃ : Highest	.79	.23	.20	.57	.22	.59
X ₄ : Free	.81	.40	-.05	.79	.23	.37
X ₅ : Maturity	.80	.43	-.06	.84	.25	.28

school officials of Lenawee County, Michigan, and Jefferson County, Wisconsin.

¹Most of the important literature has been reviewed in W. H. Sewell, A. C. Haller, and M. A. Straus, "Social Class and Level of Educational and Occupational Aspiration," *American Sociological Review*, 22 (Feb., 1957) pp. 67-73; A. C. Holloway and J. V. Barrowman, "The Educational and Occupational Aspirations and Plans of Negro and White Male Elementary School Students," *Pacific Sociological Review*, 2 (Fall, 1959), pp. 16-60; A. C. Haller and J. E. Butterworth, "Peer Influences on Levels of Occupational and Educational Aspiration," *Social Forces* (forthcoming); and J. A. Kohl, *The American Class Structure* (New York, Doubleday & Co., 1957), Chapter 10.

²G. C. North and P. K. Matt, "Jobs and Occupations: A Popular Definition," reprinted in R. Bendix and S. M. Lipset, *Class, Status, and Power: A Study in Social Stratification*, (Urbana, Illinois, The Free Press) 1953, pp. 116-122. The interpolations and the methods by which they were estimated are available upon request. The writers wish to thank Russell E. Dyer and his colleagues at Ohio State University for providing many of the interpolations used in the present projects.

FOOTNOTES

The Michigan data reported here are taken from a project of the Michigan Agricultural Experiment Station, of which this paper is Journal Series Number 2616 and in part were analyzed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare. The Wisconsin data reported here are taken from research of William H. Sewell, supported by the Wisconsin Agricultural Experiment Station and by a grant from the Rockefeller Foundation. The writers wish to acknowledge the assistance of the MISTIC Computer Laboratory of Michigan State University and the Numerical Analysis Laboratory of the University of Wisconsin, as well as the cooperation of the school officials of Lenawee County, Michigan, and Jefferson County, Wisconsin.

¹Most of the important literature has been reviewed in W. H. Sewell, A. O. Haller, and M. A. Straus, "Social Class and Level of Educational and Occupational Aspiration," American Sociological Review, 22 (Feb., 1957) pp. 67-73; R. C. Holloway and J. V. Berreman, "The Educational and Occupational Aspirations and Plans of Negro and White Male Elementary School Students," Pacific Sociological Review, 2 (Fall, 1959), pp. 56-60; A. O. Haller and C. E. Butterworth, "Peer Influences on Levels of Occupational and Educational Aspiration," Social Forces (forthcoming); and J. A. Kahl, The American Class Structure (New York, Reinhart & Co., 1957), Chapter 10.

²C. C. North and P. K. Hatt, "Jobs and Occupations: A Popular Evaluation," reprinted in R. Bondix and S. M. Lipset, Class, Status, and Power: A Reader in Social Stratification, (Glencoe, Illinois, The Free Press) 1953, pp. 410-422. The interpolations and the methods by which they were estimated are available upon request. The writers wish to thank Russell R. Dynes and his colleagues at Ohio State University for providing many of the interpolations used in the present projects.

FOOTNOTES (continued)

³See, for example, R. B. Stephenson, "Mobility Orientation of 1000 Ninth Graders," American Sociological Review, 22 (April, 1957), pp. 204-212.

⁴Henry F. Kaiser, "The Varimax Criterion for Analytic Rotation in Factor Analysis," Psychometrika, 23 (September, 1958), pp. 187-200. Also see the same writer's "The Varimax Method of Factor Analysis," Ph.D. dissertation, University of California, 1956. Based on principal components, the varimax method provides an objective technique for rotating orthogonally to achieve a psychologically interpretable factor solution. Since in the varimax method the principal components have an exact mathematical relationship to the rotated factors, it is not necessary to produce a table specifying the former, and we have not done so in this paper. However, these data will be provided on request.

⁵For a detailed description of this method of constructing indexes of factors, see Margaret Jarman Hagood and Daniel O. Price, Statistics for Sociologists (New York, Henry Holt and Company), 1952, pp. 526-530.

⁶Stephenson, op. cit.

⁷It is anticipated that a paper reporting the correlation of general LOA with a number of other personality, social situation, and behavior variables will be published in the near future.

Other studies have been concerned with the relation between certain values and needs and differential levels of general well-being. Stephenson (20) indicates the importance to personal adjustment of holding of the following values: (1) The belief that the world is a better place to live in if it is a more rational society, (2) the willingness to learn from other people's way in the conduct of life.

The author gratefully acknowledges the cooperation of the Salem High School officials as well as the valuable assistance of Joseph Roper for her work in scoring and tabulating the questionnaires.

Report VI

OCCUPATIONAL ASPIRATION, v ACHIEVEMENT, AND PEER GROUP MEMBERSHIP

Irwin W. Miller *

Numerous studies in the literature have been concerned with the problem of the differential social achievement and mobility of various segments of American society. Several of these studies have focused on levels of educational and occupational aspiration as central factors in attempting to understand the problem. Differential levels of aspiration, in turn, have been related to social status (2,10,15,16,17,18,21), race (17), ethnicity (17), values (16,17,20,22), reference groups (8,10), family experience (4,20,22), urban-rural residence (7,9), and n Achievement (12).

Several illustrations from the literature will serve to indicate the increasing interest in reference group theory to account for the formation of social attitudes. Newcomb (14) has drawn attention to the role of reference groups for the acquisition of individual attitudes. More recently, Sherif (19) has emphasized the significance of the peer group as an interaction situation for American youth in the development of attitudes. Taking Sherif's position as a starting point, Haller and Butterworth (8) present data which tend to suggest that levels of occupational aspiration are significantly related to peer group membership in a sample of 17 year old high school boys. That is, youths who interact with each other in peer groups tend to have similar levels of occupational aspiration. Finally, Kahl (10) reports that families which take the middle class as their reference group, irrespective of what their own social status might be, tend to encourage upward mobility for their children.

Other studies have been concerned with the relation between certain values and needs and differential levels of personal achievement. Strodbeck (20) indicates the importance to personal achievement and mobility of the following values; (1) The belief that the world is orderly and amenable to rational mastery, (2) the willingness to leave home and to make one's way in

*The author gratefully acknowledges the cooperation of the Mason High School officials as well as the valuable assistance of Carolyn Hayes for her work in scoring and tabulating the questionnaires.

life, and (3) the preference for individual rather than collective credit for work done. Rosen (17,18) presents similar findings in terms of values which he calls Activistic-Passivistic Orientation, Present-Future Orientation, and Individual-Collective Orientation. Similarly, there is some evidence that boys whose parents value high occupational achievement tend to have high levels of occupational aspiration (22). Finally, McClelland (12) reports that the need for achievement (n Achievement) was found not to be related to the Occupational Level Scales of the Strong Vocational Interest Inventory.

However, at the present time there appears to be no information in the literature concerning the direct relation between the extent to which the individual values achievement and his level of occupational aspiration. The purpose of this study is to investigate this relation and, in addition, to assess the relation between achievement values and occupational aspiration and peer group membership; i.e., does the value which an individual places on achievement, as well as his level of occupational aspiration, tend to be associated with the achievement values and aspirations of his peer group members? The following three null hypotheses are to be tested:

Intra-personal Correlates:

Hypothesis I: There is no significant correlation between the extent to which an individual values achievement and his level of occupational aspiration.

Inter-personal Correlates:

Hypothesis II: The extent to which an individual values achievement is not significantly and positively related to the extent to which his peer group members value achievement.

Hypothesis III: An individual's level of occupational aspiration is not significantly and positively related to the level of aspiration of the members of his peer group.

PROCEDURE

Data to test the hypothesis were gathered from 117 junior and senior high school boys in attendance at Mason High School, Mason, Michigan, during the third week of February, 1959. The selection of the sample was guided by several considerations. It seemed advisable that the subjects should be at

an age level at which occupational aspiration could be expected to be fairly well crystallized and yet not at an age where considerable occupational achievement had already taken place. Practical considerations suggested that the members of the sample have access to daily interaction with each other and that a considerable amount of personal contact might be expected. Finally, age, sex, and educational status should be homogeneous for the group: these might influence the range of known occupational alternatives, the values placed on achievement, and the opportunities for, as well as types of, peer group formation.

Level of occupational aspiration was assessed by means of the total scores obtained by the individual on the Occupational Aspiration Scale (OAS), Form Y, (6). The OAS is an eight item forced choice instrument which requires that the respondent choose one out of ten occupations presented with each one of the eight questions. In all, there are eighty different occupational titles selected from the 1947 NORC study (13) of the prestige of ninety occupations. The alternatives for each question systematically span the entire range of occupational prestige. The alternatives for each question are scored from zero to nine; thus the total possible score for all eight items ranges from 0 to 72. In addition to the total score, a number of sub-scores may be obtained. These are based on two levels, the idealistic and the realistic, each at two career periods, initial (end of schooling) and mature (at age thirty). The four possible combinations of these classifications are each assessed twice, thus giving a total of eight questions.

The extent to which an individual values achievement was assessed in terms of the degree of agreement or disagreement with each of the nine items of the y Achievement scale presented by DeCharas, et al (3). The nine items are:

1. I enjoy work as much as play.
2. I nearly always strive hard for personal achievement.
3. I feel that my future peace and self respect depend upon my accomplishing some notable piece of work.
4. I set difficult goals for myself which I attempt to reach.
5. I enjoy relaxation wholeheartedly only when it follows the completion of a substantial piece of work.
6. I work like a slave at everything I undertake until I am satisfied with the results.
7. When a man is no longer anxious to do better than well, he is done for.
8. I feel that nothing else which life can offer is a substitute for great achievement.
9. Only ambition will bring a man's mind into full activity.

y Achievement, as distinguished from n Achievement, has been characterized as a self-descriptive measure of motivation, or simply as a measure of valuing achievement (3,11). Moreover, it has been shown to be a measure independent of the better known n Achievement, or achievement motivation (3). In this study, the nine y Achievement items were buried among eleven other items. Scoring was achieved by summing the weighted response categories for all nine items. The five response categories ranged from a weight of 0 for strongly disagree to 4 for strongly agree. Thus, the total possible scores on the y Achievement scale range from 0 to 36.

For the purposes of the present study, a peer group was defined as comprising two or more individuals who make reciprocal choices in response to a sociometric question (23) which asks the respondent to list the names of his best friends from among those attending school with him. The test instruments were administered in the following order: (1) Sociometric question, (2) OAS, and (3) y Achievement Scale.

RESULTS

Table One presents descriptive statistics regarding the distributions of scores on the OAS and on the y Scale. The actual N is somewhat lower than the original sample size because several persons who yielded incomplete data were excluded from the analysis.

TABLE ONE: Means and Standard Deviations for the OAS and the y Achievement Scale.

Instrument	Mean	SD	Range	N
<u>OAS</u>	37.63	11.90	53(13-66)	94
<u>y</u> Scale	21.65	4.45	23(9-32)	98

Tests of Hypothesis I are presented in Table Two. The null hypothesis concerning the correlation between level of occupational aspiration and achievement values must be rejected at the .02 level. The correlation is positive although low. The correlations between y Achievement and the sub-scores of the OAS, i.e., the ideal and realistic levels, although not suggested

in the hypotheses, are also presented in Table Two. The correlation between the realistic level and $\bar{y}$ Achievement is positive, low, and significant at the .02 level, while the correlation between the idealistic level and $\bar{y}$ Achievement is slightly lower and not significant at the .05 level.

TABLE TWO: Correlations between OAS scores and $\bar{y}$ Scale Scores

OAS Indices	$\bar{y}$ Scale	d.f.	F^1	N
Total score	+.25	92	<.02	94
Realistic	+.25	95	<.02	97
Idealistic	+.20	92	>.05	94

Results of tests of Hypotheses II and III are presented in Table Three. The null hypothesis concerning the relation between the extent to which an individual values achievement and the achievement values of his peer group members must be accepted. The low and non-significant intra-class correlation (R)² suggests that an individual's achievement values do not tend to be similar to the achievement values of the members of his peer group as measured by the $\bar{y}$ Scale.

TABLE THREE: Intra-class Correlations for the OAS and the $\bar{y}$ Achievement Scale for members of peer groups

Instrument	R	F	F^3	d.f.: n_1	n_2	C^4	K^5
$\bar{y}$ Scale	+.09	1.15	>.05	39	41	40	2.02
OAS	+.33	1.80	<.01	69	78	70	2.10

¹Two-tailed tests for the computed product-moment r (1); .05 level as criterion.

²Tests of hypothesis II and III were based on one-tailed F tests of significance for the intra-class correlation coefficient R (5), with the .05 point as the criterion for acceptance or rejection.

³One-tailed F tests.

⁴Number of peer groups.

⁵Mean number of persons per group.

Hypothesis III, however, must be rejected at better than the .01 point of significance. The positive R of .33 suggests that an individual's level of occupational aspiration tends to be similar to the aspiration levels of his peer group members. However, the relationship is not especially strong.

CONCLUSION

It has been shown that there tends to be a positive relationship between an individual's level of occupational aspiration and the extent to which he values achievement. However, the relationship is not high and suggests that there are many other factors mediating personal achievement values and level of occupational aspiration. For one thing, a person may well value achievement quite highly and yet aspire to non-occupational goals as an expression of his achievement values. That is, achievement may have quite different meanings for different people not only in the way in which it is conceptualized, but also in the preferred manner of expression.

Secondly, a person might place a high premium on achievement in other people and yet not translate his own values into concrete goals for himself. Finally, for some individuals, low occupational prestige achievement may represent quite a personal achievement, and be consistent with their high values for achievement. On the other hand, those having low achievement values may aspire to high prestige occupations for non-achievement reasons.

It is not immediately clear why occupational aspirations, and not achievement values, tend to be similar among peer group members. Perhaps occupational aspirations are more salient and specific, and hence more readily communicated. Finally, future research might profitably examine a whole host of personality factors and their intra-group relationships with an aim to clarifying questions in the areas of personality theory, person perception, and inter-personal relationships on the small group level.

REFERENCES

- (1) Edwards, A.L., Statistical Methods for the Behavioral Sciences, Rhinehart: New York, 1954, p. 147 & p. 502.
- (2) Remy, LaMar T., Social Class and Occupational Aspiration, Amer. Soc. Review, 21 (1956), pp. 703-709.
- (3) DeCharms, R., Morrison, W.H., Weisman, W., and McClelland, D.C., Behavioral correlates of directly and indirectly measured achievement motivation. In Studies in Motivation, edited by D.C. McClelland. New York: Appleton-Century-Crofts, Inc., 1955, pp. 414-423.
- (4) Dynes, R.R., A.C. Clarke, and S. Dinitz. Levels of occupational aspiration: Some aspects of family experience as a variable. Amer. Soc. Review, 21 (1956), pp. 212-215.
- (5) Haggard, E.A., Intraclass Correlation and Analysis of Variance, New York: Dryden Press, Inc., 1958, pp. 13-16.
- (6) Haller, A.O., Occupational Aspiration Scale, (East Lansing, Mich., 1957). Also see I.W. Miller, "Normalized Data for the OAS Raw Scores," mimeographed paper published by the Social Research Service of Michigan State University, (East Lansing, Mich., 1958)
- (7) Haller, A.O., Research problems on the occupational achievement levels of farm-reared people. Rural Soc., 21 (Dec. 1958), pp. 355-362.
- (8) Haller, A.O., and Butterworth, C.E., Peer group influences on levels of occupational and educational aspiration. East Lansing, Mich., (To be published)
- (9) Haller, A.O., and W. H. Sewell. Farm residence and levels of educational and occupational aspiration, Amer. J. Soc., 62, (January 1957), pp. 407-411.
- (10) Kahl, J.A. Educational and occupational aspirations of "Common Man" boys, Harvard Educ. Rev., 23 (1953), pp. 186-203.
- (11) McClelland, D.C., Methods of measuring human motivation. In Atkinson, J.W. (Ed.) Motives in Fantasy, Action, and Society, Van Nostrand: Princeton, N.J., 1958, Chap. I.
- (12) _____, J. Atkinson, R. Clark, and E. Lowell, The Achievement Motive. Appleton-Century-Crofts: New York, 1953.
- (13) National Opinion Research Center, "Jobs and Occupations: A Popular Evaluation," Opinion News, 9 (September, 1947); reprinted in R. Bendix and S. Lipset, eds., Class, Status, and Power: A Reader in Social Stratification. Glencoe, Illinois: The Free Press, 1953, pp. 92-128.

- (14) Newcomb, T.M., Social Psychology. New York: Dryden Press; 1950, pp. 194-232.
- (15) Reisman, L., Level of aspiration and social class. Amer. Soc. Review, 18, (1953), pp. 233-242.
- (16) Rosen, B.C., The achievement syndrome: a psychocultural dimension of social stratification. American Sociological Review, 21, (April, 1956), pp. 203-211.
- (17) _____, Race, ethnicity, and the achievement syndrome. American Sociological Review, 24, (February, 1959), pp. 47-60.
- (18) Sewell, W.H., A.O. Haller, R.A. Strauss, Social status and educational and occupational aspiration. Amer. Soc. Review, 22, (February, 1957), pp. 67-73.
- (19) Sherif, M., and Sherif, C.W., An Outline of Social Psychology. Revised edition, New York: Harper and Brothers, 1956, pp. 280-331.
- (20) Strodtbeck, F.L., Family interaction, values, and achievement. In D.C. McClelland, et al., Talent and Society, Van Nostrand: New Jersey, 1958, pp. 135-191.
- (21) Stubbins, J., The relationship between level of vocational aspiration and certain personal data. Genetic Psychology Monographs, 41 (1950), pp. 327-408.
- (22) Unpublished data from Lenawee County, Michigan, on file with A.O. Haller, Department of Sociology and Anthropology, Michigan State University, East Lansing, Michigan. Also see A.O. Haller, "Planning to Farm: A Social Psychological Interpretation," Social Forces, 37 (March 1959), pp. 263-268.
- (23) For methodological considerations, see G. Lindsay and E.F. Borgatta, Sociometric Measurement, in G. Lindsay, ed., op.cit., Vol. I. Also see C.H. Proctor and C.F. Lewis, Analysis of Sociometric Data, in Jahoda, Deutsch, and Cook, Research Methods in Social Relations. New York: Dryden Press, 1951, Vol. II.

YOUR NAME _____

INSTRUCTIONS: Below are a number of statements people often say they believe.

You will probably find that you agree with some and disagree with others.

Indicate your degree of agreement or disagreement with each of the statements by circling the answers in the left hand margin, as follows:

SA - I strongly agree
A - I agree
? - I am undecided
D - I disagree
SD - I strongly disagree

Be sure your name is on the top of this sheet.

-
- | | | | | | |
|----|---|---|---|----|---|
| SA | A | ? | D | SD | 1. I enjoy work as much as play. |
| SA | A | ? | D | SD | 2. The only purpose of working is to make money. |
| SA | A | ? | D | SD | 3. I nearly always strive hard for personal achievement. |
| SA | A | ? | D | SD | 4. I don't like to have to make appointments. |
| SA | A | ? | D | SD | 5. I feel that my future peace and self respect depend upon my accomplishing some notable piece of work. |
| SA | A | ? | D | SD | 6. I would be unhappy living away from my relatives. |
| SA | A | ? | D | SD | 7. On the whole, the old ways of doing things are the best. |
| SA | A | ? | D | SD | 8. I enjoy relaxation wholeheartedly only when it follows the successful completion of a substantial piece of work. |
| SA | A | ? | D | SD | 9. I like to see new things and meet new people. |
| SA | A | ? | D | SD | 10. I set difficult goals for myself which I attempt to reach. |
| SA | A | ? | D | SD | 11. The happiest people are those who do things the way their parents did. |
| SA | A | ? | D | SD | 12. I work like a slave at everything I undertake until I am satisfied with the results |
| SA | A | ? | D | SD | 13. When a boy becomes a man, he should leave home. |
| SA | A | ? | D | SD | 14. Life would be boring without new experiences. |
| SA | A | ? | D | SD | 15. When a man is no longer anxious to do better than well, he is done for. |

(GO ON TO THE NEXT PAGE)

- SA A 7 D SD 16. People who can't leave their hometowns are hard for
me to understand.
- SA A 7 D SD 17. I feel that nothing else which life can offer is a
substitute for great achievement.
- SA A 7 D SD 18. The more school a person gets the better off he is.
- SA A 7 D SD 19. I like people who are willing to change.
- SA A 7 D SD 20. Only ambition will bring a man's mind into full
activity.

oo o oo o oo

Copyright 1967
By Amelia G. Miller

NAME _____

APPENDIX I

OCCUPATIONAL ASPIRATION SCALE

INFORMATION ON THE OCCUPATIONAL ASPIRATION SCALE

THIS SET OF QUESTIONS CONCERNS YOUR INTEREST IN DIFFERENT TYPES OF JOBS. THERE ARE EIGHT QUESTIONS. EACH ONE ASKS YOU TO CHOOSE ONE JOB OUT OF TWO CHOICES.

BE SURE YOUR NAME IS ON THE TOP OF THIS PAGE.

READ EACH QUESTION CAREFULLY. THEY ARE ALL DIFFERENT.

CHOOSE EACH ONE THE BEST YOU CAN. DON'T HESITATE.

Question 1. Of the jobs listed in this question, which do you WISH you were an ARMY MAN? YOU CAN ONLY CHOOSE ONE JOB.

1.1 _____ Soldier

1.2 _____ Soldier's work for a city government

1.3 _____ United States representative in Europe

1.4 _____ Captain in the army

1.5 _____ United States Supreme Court Justice

1.6 _____ High school

1.7 _____ Scientist

1.8 _____ Farmer

1.9 _____ Family agricultural agent

1.10 _____ Filling station attendant

Copyright 1957
By Archie O. Haller

YOUR NAME _____

OCCUPATIONAL ASPIRATION SCALE

THIS SET OF QUESTIONS CONCERNS YOUR INTEREST IN DIFFERENT KINDS OF JOBS. THERE ARE EIGHT QUESTIONS. EACH ONE ASKS YOU TO CHOOSE ONE JOB OUT OF TEN PRESENTED.

BE SURE YOUR NAME IS ON THE TOP OF THIS PAGE.

READ EACH QUESTION CAREFULLY. THEY ARE ALL DIFFERENT.

ANSWER EACH ONE THE BEST YOU CAN. DON'T OMIT ANY.

Question 1. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER?

- 1.1 _____ Lawyer
- 1.2 _____ Welfare worker for a city government
- 1.3 _____ United States representative in Congress
- 1.4 _____ Corporal in the Army
- 1.5 _____ United States Supreme Court Justice
- 1.6 _____ Night watchman
- 1.7 _____ Sociologist
- 1.8 _____ Policeman
- 1.9 _____ County agricultural agent
- 1.10 _____ Filling station attendant

Question 2. Of the jobs listed in this question, which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your SCHOOLING IS OVER?

- 2.1 _____ Member of the board of directors of a large corporation .
- 2.2 _____ Undertaker
- 2.3 _____ Banker
- 2.4 _____ Machine operator in a factory
- 2.5 _____ Physician (doctor)
- 2.6 _____ Clothes presser in a laundry
- 2.7 _____ Accountant for a large business
- 2.8 _____ Railroad conductor
- 2.9 _____ Railroad engineer
- 2.10 _____ Singer in a night club

Question 3. Of the jobs listed in this question which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER?

- 3.1 _____ Nuclear physicist
- 3.2 _____ Reporter for a daily newspaper
- 3.3 _____ County judge
- 3.4 _____ Barber
- 3.5 _____ State governor
- 3.6 _____ Soda fountain clerk
- 3.7 _____ Biologist
- 3.8 _____ Mail carrier
- 3.9 _____ Official of an international labor union
- 3.10 _____ Farm Hand

Question 4. Of the jobs listed in this question, which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your SCHOOLING IS OVER?

- 4.1 _____ Psychologist
- 4.2 _____ Manager of a small store in a city
- 4.3 _____ Head of a department in state government
- 4.4 _____ Clerk in a store
- 4.5 _____ Cabinet member in the federal government
- 4.6 _____ Janitor
- 4.7 _____ Musician in a symphony orchestra
- 4.8 _____ Carpenter
- 4.9 _____ Radio announcer
- 4.10 _____ Coal miner

Question 5. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD?

- 5.1 _____ Civil engineer
- 5.2 _____ Bookkeeper
- 5.3 _____ Minister or Priest
- 5.4 _____ Streetcar motorman or city bus driver
- 5.5 _____ Diplomat in the United States Foreign Service
- 5.6 _____ Share cropper (one who owns no livestock or farm machinery, and does not manage the farm)
- 5.7 _____ Author of novels
- 5.8 _____ Plumber
- 5.9 _____ Newspaper columnist
- 5.10 _____ Taxi driver

Question 6. Of the jobs listed in this question, which ONE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished?

- 6.1_____ Airline pilot
- 6.2_____ Insurance agent
- 6.3_____ Architect
- 6.4_____ Milk route man
- 6.5_____ Mayor of a large city
- 6.6_____ Garbage collector
- 6.7_____ Captain in the army
- 6.8_____ Garage mechanic
- 6.9_____ Owner-operator of a printing shop
- 6.10_____ Railroad section hand

Question 7. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD?

- 7.1_____ Artist who paints pictures that are exhibited in galleries
- 7.2_____ Traveling salesman for a wholesale concern
- 7.3_____ Chemist
- 7.4_____ Truck driver
- 7.5_____ College professor
- 7.6_____ Street sweeper
- 7 7_____ Building contractor
- 7.8_____ Local official of a labor union
- 7.9_____ Electrician
- 7.10_____ Restaurant waiter

Question 8. Of the jobs listed in this question, which ONE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished?

- 8.1___ Owner of a factory that employs about 100 people
- 8.2___ Playground director
- 8.3___ Dentist
- 8.4___ Lumberjack
- 8.5___ Scientist
- 8.6___ Shoeshiner
- 8.7___ Public school teacher
- 8.8___ Owner-operator of a lunch stand
- 8.9___ Trained machinist
- 8.10___ Dock worker

Raw Scores

Mean = 36.2

S.D. = 12.77

N = 101

T-Scores

Mean = 50.0

S.D. = 10.0

L. G. Miller, Jr.
April, 1952

Normalized Data for O.A.S. Raw Scores

The normalized data for the O.A.S. scores were computed by the method given by Edwards.^{1/} The data entitled "observed S" represents equivalent scores having a mean of zero and a standard deviation of 1.0. However, the form of the "observed S" distribution is the same as that for the raw scores. The cumulative frequencies below a given raw score plus one-half of the frequencies of that score were converted to cumulative percentages (or proportions of total N). These cumulative percentages were used to find the S score value corresponding to the point in a theoretical normal distribution by referring to a table of the unit normal curve. These normalized S scores also have a mean of zero and a standard deviation of 1.0; however, the scores have been stretched in such a way as to normalize the distribution. Also, the cumulative percentages were converted to equivalent T-scores by means of a table of T-scores. Essentially, a T-score equals a normal S score multiplied by 10 and the product added to 50. Hence, the T-scores have a mean of 50 and a standard deviation of 10.0. Standard scores enable us to compare measurements from various distributions of comparable form since we have reduced the measurements of each distribution to a common scale.

Raw Scores:

Mean = 36.2

S.D. = 12.99

N = 441

T-Scores:

Mean = 50.0

S.D. = 10.0

I. W. Miller, Jr.
April, 1958

^{1/} Edwards, A. L., Statistical Methods for the Behavioral Sciences (New York; Rinehart and Company, Inc.: 1954)

	Raw Score	f	Observed S	cf	cp	Normal S	T-Scores
(1)	2	1	-2.63	0.5	.0011	-3.07	20
(2)	10	2	-2.02	2.0	.0045	-2.61	23
(3)	13	3	-1.79	4.5	.0102	-2.32	27
(4)	14	2	-1.71	7.0	.0159	-2.15	28
(5)	16	6	-1.56	11.0	.0250	-1.96	30
(6)	17	8	-1.48	18.0	.0409	-1.74	33
(7)	18	3	-1.40	23.5	.0533	-1.61	34
(8)	19	7	-1.32	28.5	.0647	-1.52	35
(9)	20	8	-1.25	36.0	.0817	-1.39	36
(10)	21	11	-1.17	45.5	.1033	-1.26	38
(11)	22	8	-1.09	55.0	.1248	-1.15	38
(12)	23	15	-1.02	66.5	.1510	-1.03	40
(13)	24	12	-0.94	80.0	.1816	-0.91	41
(14)	25	12	-0.86	92.0	.2088	-0.81	42
(15)	26	10	-0.78	103.0	.2338	-0.73	43
(16)	27	15	-0.71	115.5	.2622	-0.64	44
(17)	28	13	-0.63	129.5	.2940	-0.54	45
(18)	29	22	-0.55	147.0	.3337	-0.43	46
(19)	30	17	-0.48	166.5	.3780	-0.31	47
(20)	31	13	-0.40	181.5	.4120	-0.22	48
(21)	32	10	-0.32	193.0	.4381	-0.16	48
(22)	33	8	-0.25	202.0	.4585	-0.10	49
(23)	34	11	-0.17	211.5	.4801	-0.05	50
(24)	35	16	-0.09	225.0	.5108	0.03	50
(25)	36	8	-0.02	237.0	.5380	0.10	51
(26)	37	12	0.06	247.0	.5607	0.15	52
(27)	38	8	0.14	257.0	.5834	0.21	52

	Raw Score	f	Observed S	cf	cp	Normal S	Z-scores
(28)	39	9	0.22	265.5	.6027	0.26	53
(29)	40	13	0.29	276.5	.6276	0.33	53
(30)	41	10	0.37	288.0	.6538	0.40	54
(31)	42	8	0.45	297.0	.6742	0.45	55
(32)	43	9	0.52	305.5	.6935	0.51	55
(33)	44	13	0.60	316.5	.7184	0.58	56
(34)	45	5	0.68	325.5	.7389	0.64	56
(35)	46	7	0.75	331.5	.7525	0.68	57
(36)	47	9	0.83	339.5	.7707	0.74	57
(37)	48	10	0.91	349.5	.7934	0.82	58
(38)	49	8	0.99	358.0	.8127	0.89	59
(39)	50	4	1.06	364.0	.8263	0.94	59
(40)	51	11	1.14	371.5	.8433	1.01	60
(41)	52	9	1.22	381.5	.8660	1.11	61
(42)	53	4	1.29	388.0	.8808	1.18	62
(43)	54	5	1.37	392.5	.8910	1.23	62
(44)	55	5	1.45	397.5	.9023	1.29	63
(45)	56	8	1.52	404.0	.9171	1.39	64
(46)	57	9	1.60	412.5	.9364	1.53	65
(47)	58	4	1.68	419.0	.9511	1.66	67
(48)	59	3	1.76	422.5	.9591	1.74	67
(49)	60	7	1.83	427.5	.9704	1.89	69
(50)	61	5	1.91	433.5	.9840	2.15	71
(51)	62	1	1.99	436.5	.9908	2.36	74
(52)	63	1	2.06	437.5	.9931	2.46	75
(53)	64	2	2.14	439.0	.9965	2.70	78
(54)	65	1	2.22	440.5	.9999	3.70	80

	<u>Raw Score</u>	<u>T-Score</u>		<u>Raw Score</u>	<u>T-Score</u>
(1)	2	20	(28)	39	53
(2)	10	23	(29)	40	53
(3)	13	27	(30)	41	54
(4)	14	28	(31)	42	55
(5)	16	30	(32)	43	55
(6)	17	33	(33)	44	56
(7)	18	34	(34)	45	56
(8)	19	35	(35)	46	57
(9)	20	36	(36)	47	57
(10)	21	38	(37)	48	58
(11)	22	38	(38)	49	59
(12)	23	40	(39)	50	59
(13)	24	41	(40)	51	60
(14)	25	42	(41)	52	61
(15)	26	43	(42)	53	62
(16)	27	44	(43)	54	62
(17)	28	45	(44)	55	63
(18)	29	46	(45)	56	64
(19)	30	47	(46)	57	65
(20)	31	48	(47)	58	67
(21)	32	48	(48)	59	67
(22)	33	49	(49)	60	69
(23)	34	50	(50)	61	71
(24)	35	50	(51)	62	74
(25)	36	51	(52)	63	75
(26)	37	52	(53)	64	78
(27)	38	52	(54)	65	80

O. A. S. Individual Item T-Scores

Item Score	T-Scores							
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
0	27	30	31	25	36	22	22	21
1	40	31	43	30	43	26	28	29
2	47	40	49	34	45	31	41	35
3	52	45	52	43	47	40	46	39
4	56	45	55	49	51	45	48	40
5	58	47	58	54	53	46	52	45
6	62	50	60	58	54	48	57	49
7	65	54	65	59	59	52	60	54
8	72	59	71	63	66	60	63	58
9	80	64	80	68	71	69	71	63

The total score is the sum of the scores for each of the eight questions.

Scoring Instructions

Occupational Aspiration Scale

All eight questions are scored the same.

There are ten alternatives for each question, and only one alternative may be checked.

The scores for each alternative are as follows:

<u>Alternative</u>	<u>Score</u>
1	7
2	4
3	8
4	2
5	9
6	0
7	6
8	3
9	5
10	1

The total score is the sum of the scores for each of the eight questions.

CORRELATION COEFFICIENTS, MEANS AND STANDARD DEVIATIONS FOR
OAS TOTAL SCORE AND 33 PERSONAL, SOCIAL-SITUATIONAL
AND PERFORMANCE VARIABLES

Lenawee County Sample, N=433

	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
1	5	13	38	19	02	10	26	24	24	-03	-07	-08	16	-07	07	14	16	-11	28	03	11	20	06	28	21	-07	29	44	22	22	37	50	-30
2	1	11	34	14	11	05	24	29	29	-06	-02	-12	17	-10	09	15	15	-11	27	04	07	22	28	24	01	35	48	29	29	41	53	-19	
3	-	02	35	10	07	08	15	12	12	-10	-09	-13	12	-06	-06	11	11	-09	19	05	02	17	30	13	-08	21	16	16	16	23	49	-23	
4	--	--	-01	-05	03	10	11	14	14	-02	03	-01	02	-03	-03	04	06	07	-01	-00	01	06	-04	-02	-03	10	12	08	09	11	01	-10	
5	--	--	--	10	-04	17	26	10	10	-11	-02	-13	21	-05	04	03	28	-09	38	12	08	12	25	12	-01	13	05	14	09	15	35	-18	
6	--	--	--	--	-03	-09	03	19	19	-07	-17	-13	04	-06	03	06	-06	05	-08	01	-04	-03	04	03	02	05	07	05	11	05	-02	-04	
7	--	--	--	--	--	15	-03	12	12	03	03	06	12	-25	-05	02	-12	25	-08	-12	-05	18	11	-08	-09	-01	05	05	11	05	03	03	-11
8	--	--	--	--	--	--	03	06	06	-01	15	-02	06	08	02	-02	-12	-11	-08	-12	-05	08	26	25	06	-09	09	25	14	12	26	07	
9	--	--	--	--	--	--	--	31	31	-07	12	-20	16	-14	01	10	25	36	50	17	25	-01	09	26	21	06	09	25	14	11	03	03	-07
10	--	--	--	--	--	--	--	--	-12	-05	05	-08	17	-34	00	-01	33	-29	-26	-13	-14	-04	-15	-26	-13	-05	12	23	11	00	02	-15	-10
11	--	--	--	--	--	--	--	--	--	--	--	16	-11	14	07	05	-18	21	-26	-13	-14	-04	-15	-26	-13	-05	02	01	00	02	-12	01	
12	--	--	--	--	--	--	--	--	--	--	--	02	-11	20	09	12	-05	19	-18	-06	-05	10	-01	-08	-08	-07	-02	-12	02	-12	-01	06	
13	--	--	--	--	--	--	--	--	--	--	--	--	-11	01	06	01	-18	16	-24	-11	-13	06	-12	-14	-26	03	-01	-12	-09	-12	-12	02	
14	--	--	--	--	--	--	--	--	--	--	--	--	--	06	06	00	-40	-45	-45	-12	-09	-01	-08	-23	-15	-16	-16	-01	00	-11	-11	-01	
15	--	--	--	--	--	--	--	--	--	--	--	--	--	-00	04	00	-40	-45	-45	-12	-09	-01	-08	-23	-15	-16	-16	-01	00	-11	-11	-01	
16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	06	00	07	-02	-08	04	08	00	03	04	04	08	08	07	00	00	-03	
17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	04	-01	-04	-02	-03	17	03	09	08	01	06	06	00	06	14	-07	
18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-46	-47	19	27	-03	14	20	27	10	03	06	00	-10	13	00	
19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-51	-51	-11	-16	02	-13	-23	-28	-10	-07	-07	-03	-12	19	-08	
20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	28	30	-09	19	37	37	18	11	11	11	19	14	06	
21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	22	-13	09	20	13	06	06	05	09	06	11	04	
22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-13	10	16	33	06	11	09	09	09	10	04	
23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	-02	16	16	00	02	07	16	-22	
24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	16	16	00	02	07	16	03	-06
25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	16	17	18	12	18	22	24	-06
26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	12	12	11	11	18	22	22	-02
27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	12	12	00	09	28	19	06	-10
28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	12	12	00	09	39	28	06	-05
29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	12	12	00	09	09	06	-13	-02
30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	12	12	00	09	09	06	-13	-02
31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	12	12	00	09	09	06	-13	-02
32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	12	12	00	09	09	06	-13	-02
33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	12	12	00	09	09	06	-13	-02
34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	12	12	00	09	09	06	-13	-02
35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	13	12	12	00	09	09	06	-13	-02

SECTION 1

TE: These variables are described variable number in the variable identification form following this table. variables on the identification form not appear on Table 25. These are variable numbers 31 and 36. Number 31 omitted because it is redundant, the sum of variables 29 and 30. variable 36 was omitted because data on were available for a sample of only .

SECTION 1

E: These variables are described variable number in the variable identification form following this table. variables on the identification form not appear on Table 25. These are variable numbers 31 and 36. Number 31 omitted because it is redundant, the sum of variables 29 and 30. variable 36 was omitted because data on were available for a sample of only

CORRELATION COEFFICIENTS, MEANS AND STANDARD DEVIATIONS FOR
OAS TOTAL SCORE AND 33 PERSONAL, SOCIAL-SITUATIONAL
AND PERFORMANCE VARIABLES

Lenawee County Sample, N=433

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
1	--	64	45	13	38	19	02	10	26	24	-03	-07	-08	16	14	07	14	16	-11	28	03	11	20	06	28	21	-07	29	44	22	-07	37	50	-30	
2	--	--	41	11	34	14	11	05	24	29	-06	-02	-12	15	15	09	15	15	-11	27	04	07	22	07	28	24	01	35	48	29	-13	41	53	-19	
3	--	--	--	02	35	10	07	08	15	12	-10	-09	-13	11	11	-06	11	11	-09	19	05	02	17	22	-05	30	13	-05	23	27	16	-05	23	49	-23
4	--	--	--	--	-01	-05	03	10	11	14	-02	03	-01	-01	04	-03	04	06	07	-01	-00	01	06	-05	-04	-04	06	11	08	12	06	11	01	-10	
5	--	--	--	--	--	10	-04	17	26	10	-11	-02	-13	21	-05	04	04	06	19	04	08	12	-06	17	05	05	12	-01	10	14	09	02	15	35	-18
6	--	--	--	--	--	--	-03	-09	03	19	-07	-17	-13	04	-06	-05	03	-06	-44	-08	12	-08	14	-03	04	-03	07	-07	05	07	07	11	17	-10	
7	--	--	--	--	--	--	--	15	-03	12	03	03	06	12	-02	-05	02	-06	-05	-08	12	-05	18	18	11	11	-08	-09	-01	05	11	01	03	-11	
8	--	--	--	--	--	--	--	--	03	06	-01	15	-02	06	02	02	-02	-12	-08	-12	-05	18	18	18	11	11	-08	-09	-01	05	11	01	03	-11	
9	--	--	--	--	--	--	--	--	--	31	-07	12	-05	16	01	00	-01	33	50	17	15	03	08	23	20	20	21	12	23	11	11	18	14	01	
10	--	--	--	--	--	--	--	--	--	--	-12	-05	-08	17	-34	00	-01	33	29	50	15	03	08	23	20	20	21	12	23	11	11	18	14	01	
11	--	--	--	--	--	--	--	--	--	--	--	05	02	16	14	07	05	-18	21	-26	-13	-14	-04	-15	-26	-13	-05	03	-01	01	00	-04	-15	-10	
12	--	--	--	--	--	--	--	--	--	--	--	--	02	07	09	06	12	-05	19	-18	-06	-05	10	-01	04	-08	02	02	02	02	12	-04	-01	06	
13	--	--	--	--	--	--	--	--	--	--	--	--	--	-11	06	-00	06	-18	16	-24	-11	-13	06	-12	-14	-26	03	-01	-12	-09	-09	-04	-12	01	
14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	06	-00	06	-10	09	04	08	03	08	14	14	08	02	15	-12	17	05	17	08	02	
15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-00	06	-40	-45	-12	-09	-01	-08	00	-23	-15	-16	-05	-01	00	16	-04	-11	-01	
16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	00	-02	-08	04	08	03	09	03	04	04	03	-01	04	07	06	14	-07	
17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	04	-04	-04	-03	17	14	14	20	27	10	01	00	00	10	10	13	00	
18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	04	-46	-45	-02	-03	17	14	20	27	10	01	00	00	10	10	13	00	
19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-51	-11	-16	-02	-03	17	14	20	27	10	01	00	10	10	13	00	
20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-28	-16	-02	-03	17	14	20	27	10	01	00	10	10	13	00	
21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-30	-09	-03	17	14	20	27	10	01	00	10	10	13	00	
22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-22	-13	-03	17	14	20	27	10	01	00	10	10	13	00	
23	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-30	-09	-03	17	14	20	27	10	01	00	10	10	13	00	
24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-22	-13	-03	17	14	20	27	10	01	00	10	10	13	00	
25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-30	-09	-03	17	14	20	27	10	01	00	10	10	13	00	
26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-22	-13	-03	17	14	20	27	10	01	00	10	10	13	00	
27	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-30	-09	-03	17	14	20	27	10	01	00	10	10	13	00	
28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-22	-13	-03	17	14	20	27	10	01	00	10	10	13	00	
29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-30	-09	-03	17	14	20	27	10	01	00	10	10	13	00	
30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-22	-13	-03	17	14	20	27	10	01	00	10	10	13	00	
31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-30	-09	-03	17	14	20	27	10	01	00	10	10	13	00	
32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-22	-13	-03	17	14	20	27	10	01	00	10	10	13	00	
33	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-30	-09	-03	17	14	20	27	10	01	00	10	10	13	00	
34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-22	-13	-03	17	14	20	27	10	01	00	10	10	13	00	
35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-30	-09	-03	17	14	20	27	10	01	00	10	10	13	00	

SECTION 2

NOTE: These variables are described by variable number in the variable identification form following this table. Two variables bn the identification form do not appear on Table 25. These are variable numbers 31 and 36. Number 31 was omitted because it is redundant, being the sum of variables 29 and 30. Variable 36 was omitted because data on it were available for a sample of only 107.

SECTION 2

NOTE: These variables are described by variable number in the variable identification form following this table. Two variables in the identification form do not appear on Table 25. These are variable numbers 31 and 36. Number 31 was omitted because it is redundant, being the sum of variables 29 and 30. Variable 36 was omitted because data on it were available for a sample of only 107.

Variable Identification for Correlation Matrix^{1/}

<u>Matrix Identification</u>	<u>Description</u>
1	Occupational Aspiration Scale Scores
2	College Aspiration Level
3	C. F. I. Q. Scores
4	16 Personality Factor Test: Factor "A" (Cyclothymia vs. Schizothymia) ^{2/}
5	16 PF: Factor "B" (General Intelligence vs. Mental Defect)
6	16 PF: Factor "C" (Emotional stability or ego strength vs. dissatisfied emotionality)
7	16 PF: Factor "E" (Dominance or Ascendancy vs. Submission)
8	16 PF: Factor "F" (Surgency vs. desurgency, or depressive anxiety)
9	16 PF: Factor "G" (Character or super-ego strength vs. lack of internal standards)
10	16 PF: Factor "H" (Adventurous Autonomic resilience vs. inherent, withdrawn schizothymia)
11	16 PF: Factor "I" (Emotional sensitivity vs. tough maturity)
12	16 PF: Factor "L" (Paranoid schizothymia vs. trustful altruism)
13	16 PF: Factor "M" (Hysterical unconcern or "bohemianism", vs. practical concernedness)
14	16 PF: Factor "N" (Sophistication vs. rough simplicity)

^{1/} Based on coding key for card 1.14.

^{2/} First characteristic refers to high score

<u>Matrix Identification</u>	<u>Description</u>
15	16 PF: Factor "O" (Anxious insecurity vs. placid self-confidence)
16	16 PF: Factor "Q ₁ " (Radicalism vs. Conservativism)
17	16 PF: Factor "Q ₂ " (Independent self-sufficiency vs. lack of resolution)
18	16 PF: Factor "Q ₃ " (Will control and character stability)
19	16 PF: Factor "Q ₄ " (Nervous tension)
20	CTP: Total Adjustment Score
21	BVA 1 (Belief that work is of expressive value vs. instrumental value) ^{3/}
22	BVA 2 (Positive vs. negative evaluation of structured time)
23	BVA 3 (Positive vs. negative evaluation of physical mobility)
24	BVA 4 (Positive vs. negative evaluation of change)
25	BVA 5 (Belief in internal vs. external determination of events)
26	BVA 6 (Positive vs. negative evaluation of delayed gratification)
27	Occupational Crystallization (Certainty of occupational choice)
28	Father's educational status
29	Parental desire for ego's post-high school educational mobility
30	Parental desire for ego's high occupational achievement

^{3/} First characteristic refers to high score

<u>Matrix Identification</u>	<u>Description</u>
31	Parental desire for ego's high social status (Index based on no.'s 29 and 30 above)
32	Status Anxiety
33	Sewell S.E.S. scores
34	Grade Point Average: 1956 - 1957
35	Number of agricultural courses through 1957
36	Agricultural GPA through 1957

APPENDIX II

UNPUBLISHED QUESTIONNAIRES USED IN THE
LENAWEE COUNTY STUDY

Instructions:

This check-list is made up of statements people often say they believe.

You will probably find that you agree with some and disagree with others.

If you agree with a statement, circle agree; if you disagree with a statement,
circle disagree. Do not mark any.

Be sure your name is on the top of this sheet.

YOUR NAME _____

THE MSU WORK BELIEFS CHECK-LIST

Instructions:

This check-list is made up of statements people often say they believe.

You will probably find that you agree with some and disagree with others.

If you agree with a statement, circle Agree; if you disagree with a statement, circle Disagree. Do not omit any.

Be sure your name is on the top of this sheet.

- | | | |
|---|-------|----------|
| 1.1 The only purpose of working is to make money. | Agree | Disagree |
| 1.2 I believe a man needs to work in order to feel that he is doing something worthwhile. | Agree | Disagree |
| 1.3 I feel sorry for people whose jobs require that they take orders from others. | Agree | Disagree |
| 1.4 Every man should have a job that gives him a steady income. | Agree | Disagree |
| 1.5 The happiest men are those who work only when they feel like it. | Agree | Disagree |
| 1.6 Doing a good job is the only way to get ahead. | Agree | Disagree |
| 1.7 A regular job is good for one. | Agree | Disagree |
| 1.8 I feel sorry for rich people who never learn how good it is to have a steady job. | Agree | Disagree |
| 1.9 I don't like people who are always right on time for every appointment they have. | Agree | Disagree |
| 2.1 I feel sorry for people who have to do the same thing every day. | Agree | Disagree |
| 2.2 It makes me feel bad to be late for an appointment. | Agree | Disagree |
| 2.3 I expect people who have appointments with me to be right on time. | Agree | Disagree |
| 3.1 I would be unhappy living very far from my relatives. | Agree | Disagree |
| 3.2 I hope to move away from here within the next few years. | Agree | Disagree |
| 3.3 People who can't leave their hometowns are hard for me to understand. | Agree | Disagree |
| 3.4 A man's first loyalty should be to his home community. | Agree | Disagree |
| 3.5 When a boy becomes a man, he should leave home. | Agree | Disagree |
| 3.6 I like to see new things and meet new people. | Agree | Disagree |

1.1	The only purpose of working is to make money.	Agree	Disagree
1.2	I believe a man needs to work in order to feel that he has a real place in the world.	Agree	Disagree
1.3	I feel sorry for people whose jobs require that they take orders from others.	Agree	Disagree
1.4	Every man should have a job that gives him a steady income.	Agree	Disagree
1.5	The happiest men are those who work only when they need money.	Agree	Disagree
1.6	Doing a good job day in and day out is one of the most satisfying experiences a man can have.	Agree	Disagree
1.7	A regular job is good for one.	Agree	Disagree
1.8	I feel sorry for rich people who never learn how good it is to have a steady job.	Agree	Disagree
2.1	I don't like people who are always right on time for every appointment they have.	Agree	Disagree
2.2	I feel sorry for people who have to do the same thing every day at the same time.	Agree	Disagree
2.3	I don't like to have to make appointments.	Agree	Disagree
2.4	I believe that promptness is a virtue.	Agree	Disagree
2.5	I usually schedule my activities.	Agree	Disagree
2.6	I'd rather let things happen in their own way rather than scheduling them by a clock.	Agree	Disagree
2.7	It makes me feel bad to be late for an appointment.	Agree	Disagree
2.8	I expect people who have appointments with me to be right on time.	Agree	Disagree
3.1	I would be unhappy living away from my relatives.	Agree	Disagree
3.2	I hope to move away from here within the next few years.	Agree	Disagree
3.3	People who can't leave their hometowns are hard for me to understand.	Agree	Disagree
3.4	A man's first loyalty should be to his home community.	Agree	Disagree
3.5	When a boy becomes a man, he should leave home.	Agree	Disagree
3.6	I like to see new things and meet new people.	Agree	Disagree

4.1	I like to try new things.	Agree	Disagree
4.2	On the whole, the old ways of doing things are the best.	Agree	Disagree
4.3	Life would be boring without new experiences.	Agree	Disagree
4.4	I like people who are willing to change.	Agree	Disagree
4.5	On the whole, most changes make things worse.	Agree	Disagree
4.6	The happiest people are those who do things the way their parents did.	Agree	Disagree
4.7	New things are usually better than old things.	Agree	Disagree
5.1	I believe that a person can get anything he wants if he's willing to work for it.	Agree	Disagree
5.2	Man should not work too hard, for his fortune is in the hands of God.	Agree	Disagree
5.3	A man shouldn't work too hard because it won't do him any good unless luck is with him.	Agree	Disagree
5.4	With a little luck I believe I can do almost anything I really want to do.	Agree	Disagree
5.5	A person shouldn't hope for much in this life.	Agree	Disagree
5.6	If a man can't better himself it's his own fault.	Agree	Disagree
5.7	Practically everything I try to do turns out well for me.	Agree	Disagree
5.8	I usually fail when I try something important.	Agree	Disagree
6.1	I would rather work than go to school.	Agree	Disagree
6.2	Money is made to spend, not to save.	Agree	Disagree
6.3	I think there's something wrong with people who go to school for years when they could be out earning a living.	Agree	Disagree
6.4	One gains more in the long run if he studies than if he gets a job.	Agree	Disagree
6.5	The more school a person gets the better off he is.	Agree	Disagree
6.6	Generally speaking, things one works hard for are the best.	Agree	Disagree
6.7	When I get a little extra money I usually spend it.	Agree	Disagree

SCORING KEY (Tentative) 1957-1960

MSU Work Beliefs Check-List

1. Underlined responses are scored one point; all others are scored zero points.
2. There is a score for each sub-area, six scores in all.

- | | |
|---|-----------------------|
| 1.1 The only purpose of working is to make money. | Agree <u>Disagree</u> |
| 1.2 I believe a man needs to work in order to feel that he has a real place in the world. | <u>Agree</u> Disagree |
| 1.3 I feel sorry for people whose jobs require that they take orders from others. | Agree <u>Disagree</u> |
| 1.4 Every man should have a job that gives him a steady income. | <u>Agree</u> Disagree |
| 1.5 The happiest men are those who work only when they need money. | Agree <u>Disagree</u> |
| 1.6 Doing a good job day in and day out is one of the most satisfying experiences a man can have. | <u>Agree</u> Disagree |
| 1.7 A regular job is good for one. | <u>Agree</u> Disagree |
| 1.8 I feel sorry for rich people who never learn how good it is to have a steady job. | <u>Agree</u> Disagree |
| 2.1 I don't like people who are always right on time for every appointment they have. | Agree <u>Disagree</u> |
| 2.2 I feel sorry for people who have to do the same thing every day at the same time. | Agree <u>Disagree</u> |
| 2.3 I don't like to have to make appointments. | Agree <u>Disagree</u> |
| 2.4 I believe that promptness is a virtue. | <u>Agree</u> Disagree |
| 2.5 I usually schedule my activities. | <u>Agree</u> Disagree |
| 2.6 I'd rather let things happen in their own way rather than scheduling them by a clock. | Agree <u>Disagree</u> |
| 2.7 It makes me feel bad to be late for an appointment. | <u>Agree</u> Disagree |
| 2.8 I expect people who have appointments with me to be right on time. | <u>Agree</u> Disagree |

3.1	I would be unhappy living away from my relatives.	Agree	<u>Disagree</u>
3.2	I hope to move away from here within the next few years.	<u>Agree</u>	Disagree
3.3	People who can't leave their hometowns are hard for me to understand.	<u>Agree</u>	Disagree
3.4	A man's first loyalty should be to his home community.	Agree	<u>Disagree</u>
3.5	When a boy becomes a man, he should leave home.	<u>Agree</u>	Disagree
3.6	I like to see new things and meet new people.	<u>Agree</u>	Disagree
4.1	I like to try new things.	<u>Agree</u>	Disagree
4.2	On the whole, the old ways of doing things are the best.	Agree	<u>Disagree</u>
4.3	Life would be boring without new experiences.	<u>Agree</u>	Disagree
4.4	I like people who are willing to change.	<u>Agree</u>	Disagree
4.5	On the whole, most changes make things worse.	Agree	<u>Disagree</u>
4.6	The happiest people are those who do things the way their parents did.	Agree	<u>Disagree</u>
4.7	New things are usually better than old things.	<u>Agree</u>	Disagree
5.1	I believe that a person can get anything he wants if he's willing to work for it.	<u>Agree</u>	Disagree
5.2	Man should not work too hard, for his fortune is in the hands of God.	Agree	<u>Disagree</u>
5.3	A man shouldn't work too hard because it won't do him any good unless luck is with him.	Agree	<u>Disagree</u>
5.4	With a little luck I believe I can do almost anything I really want to do.	<u>Agree</u>	Disagree
5.5	A person shouldn't hope for much in this life.	Agree	<u>Disagree</u>
5.6	If a man can't better himself it's his own fault.	<u>Agree</u>	Disagree
5.7	Practically everything I try to do turns out well for me.	<u>Agree</u>	Disagree
5.8	I usually fail when I try something important.	Agree	<u>Disagree</u>
6.1	I would rather work than go to school.	Agree	<u>Disagree</u>
6.2	Money is made to spend, not to save.	Agree	<u>Disagree</u>
6.3	I think there's something wrong with people who go to school for years when they could be out earning a living.	Agree	<u>Disagree</u>

- 6.4 One gains more in the long run if he studies than if he gets a job. Agree Disagree
- 6.5 The more school a person gets the better off he is. Agree Disagree
- 6.6 Generally speaking, things one works hard for are the best. Agree Disagree
- 6.7 When I get a little extra money I usually spend it. Agree Disagree

This survey is an attempt to get a better picture of the problems you young people face in choosing your life's occupation, and the attitudes you have towards these problems. By carefully filling out this questionnaire you will help us to gain a better understanding of how these problems look from where you stand. This information will be of great value in developing counseling programs for high school youth. For this reason we are anxious to have you answer the questions on this form to the best of your ability.

PLEASE FOLLOW THE DIRECTIONS:

1. Read each item carefully. Answer to the best of your knowledge.
2. Be sure to answer each question. Where there are brackets, fill in an "X". Be sure that your "X" is squarely in the proper bracket before your choice. Where only a space is left, enter the word or figure called for. If you cannot answer the question, write "I do not know."
3. There are several questions which refer to your parents. If for any reason you are not living with your parents, answer for the person who acts as your parent or guardian.
4. If you have any comment to make, if you did not understand any item, if your attitudes differ from those given, or if you have problems which we failed to mention, write about them on the margin close to the item near them in meaning.

I. ABOUT MYSELF

1. MY NAME IS _____
2. MY ADDRESS IS: _____
3. MY AGE (to nearest birthday) IS: _____
- THE DATE OF MY BIRTH WAS _____
Month Day Year
5. MY SEX IS: () male () female
6. I AM A: () junior () senior
7. I MAKE MY REGULAR HOME WITH:
 () my own parents.
 () a parent and a step-parent.
 () one parent only.
 () my grandparents.
 () an uncle or aunt.
 () other (specify) _____

MICHIGAN STATE UNIVERSITY

DEPARTMENT OF SOCIOLOGY
AND ANTHROPOLOGY

THE OCCUPATIONAL PLANS OF MICHIGAN YOUTH

Dear Student:

This survey is an attempt to get a better picture of the problems you young people face in choosing your life's occupation, and the attitudes you have towards these problems. By carefully filling out this questionnaire you will help us to gain a better understanding of how these problems look from where you stand. This information will be of great value in developing counseling programs for high school youth. For this reason we are anxious to have you answer the questions on this form to the best of your ability.

PLEASE FOLLOW THE DIRECTIONS:

1. Read each item carefully. Answer to the best of your knowledge.
2. Be sure to answer each question. Where there are brackets, fill in an "X".
Be sure that your "X" is squarely in the proper bracket before your choice. Where only a space is left, enter the word or figures called for. If you cannot answer the question, write "I do not know."
3. There are several questions which refer to your parents. If for any reason you are not living with your parents, answer for the person who acts as your parent or guardian.
4. If you have any comment to make, if you did not understand any item, if your attitudes differ from those given, or if you have problems which we failed to mention, write about them on the margin close to the items near them in meaning.

I. ABOUT MYSELF

1. MY NAME IS _____.
2. MY ADDRESS IS: _____.
3. MY AGE (to nearest birthday) IS: _____.
THE DATE OF MY BIRTH WAS _____
Month Day Year
4. MY SEX IS: () male () female
5. I AM A: () junior () senior
6. I MAKE MY REGULAR HOME WITH:
() my own parents.
() a parent and a step-parent.
() one parent only.
() my grandparents.
() an uncle or aunt.
() other (specify) _____

7. MY CHURCH PREFERENCE IS: _____.

Member: () yes () no.

8. THE NAME OF MY HIGH SCHOOL IS: _____.

9. THE NUMBER OF YEARS I HAVE ATTENDED THIS HIGH SCHOOL IS: _____.

10. THE KINDS OF EXTRA CURRICULAR ACTIVITIES IN WHICH I PARTICIPATE ARE:

(Check the ones in which you participate regularly, and add to the list if necessary.)

- | | |
|---------------------|-------------------------|
| () athletics. | () annual. |
| () band-orchestra. | () student government. |
| () chorus-vocal. | () hobby club. |
| () dramatics. | () other _____. |
| () debates. | () _____. |
| () 4-H or FFA. | () _____. |
| () school paper. | () _____. |

11. COMPARED TO MOST STUDENTS IN MY HIGH SCHOOL, MY LEADERSHIP ACTIVITIES ARE:

- () greater than average.
() about average.
() less than average.

12. I LIVE:

- () on a farm.
() in the open country but not on a farm.
() in a village under 2,500.
() in a town of 2,500 - 10,000.
() in a city over 10,000.

13. AS TO WORKING WHILE I AM IN HIGH SCHOOL:

- () I have a fairly regular job outside my family and home.
() I sometimes work outside my family and home.
() I do not work outside my family and home.

14. OF ALL THE MEN I KNOW WELL, THE ONES I ADMIRE MOST ARE:

<u>Their names</u>	<u>Their exact occupations (their job titles, not the company they work for)</u>	<u>Their relationship to me (Friend, relative, teacher, minister, etc.)</u>
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____

15. THE NAMES OF MY BEST FRIENDS ARE:

1. _____
2. _____
3. _____
4. _____
5. _____

II. ABOUT MY CHOICE OF A LIFE'S OCCUPATION

1. THE OCCUPATIONS WHICH I HAVE THOUGHT ABOUT GOING INTO ARE:

- | | |
|----------|----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |

2. THE OCCUPATION THAT I PLAN TO FOLLOW IS:
(Indicate particular type of job.) _____

3. IN REGARD TO MY CHOICE OF MY OCCUPATION:

- ☐ I feel sure that my mind is made up.
- ☐ I'm not too sure, but I think my mind is made up.
- ☐ I'm not sure that my mind is made up.

4. IN REGARD TO MY CHOICE OF AN OCCUPATION:

- ☐ I have given the matter a great deal of thought.
- ☐ I have given the matter some thought.
- ☐ I have given the matter little thought.

5. AS TO MY KNOWLEDGE OF THE WORK I INTEND TO ENTER:

- ☐ I have good knowledge because I have worked at it.
- ☐ I have good knowledge because I have relatives or friends who work at it.
- ☐ I have a general knowledge, but don't know much about the details of it.
- ☐ I don't know much about it yet, but will find out by experience on the job.
- ☐ I don't know much about it yet, but will find out when I go on to school.
- ☐ I don't know because I have not yet made a choice.

6. FOR THE OCCUPATION I HAVE CHOSEN I THINK MY ABILITY IS:

- ☐ very much above average.
- ☐ somewhat above average.
- ☐ just average.
- ☐ somewhat below average.
- ☐ very much below average.
- ☐ I don't know because I have not yet made a choice.

7. COMPARED WITH MY FRIENDS, I THINK MY CHANCES FOR GETTING AHEAD IN THE OCCUPATION OF MY CHOICE ARE:
- ☐ very much above average.
 - ☐ somewhat above average.
 - ☐ just average.
 - ☐ somewhat below average.
 - ☐ very much below average.
8. IN THE OCCUPATION I HAVE CHOSEN I CAN EXPECT HELP IN GETTING STARTED:
- ☐ from my father or mother who is in this type of work.
 - ☐ from relatives who are in this type of work.
 - ☐ from friends who are in this type of work.
 - ☐ from no one.
 - ☐ I don't know because I have not made my choice yet.
9. AS TO FOLLOWING HIS OCCUPATION (FOR BOYS ONLY), MY FATHER HAS:
- ☐ tried to encourage me.
 - ☐ neither tried to encourage or discourage me.
 - ☐ tried to discourage me.
10. IN THIS QUESTION EACH LINE PRESENTS TWO FACTS PEOPLE CONSIDER WHEN THEY CHOOSE A JOB. YOU ARE TO UNDERLINE THE FACT YOU BELIEVE TO BE THE MORE IMPORTANT OF THE TWO IN CHOOSING YOUR JOB.
1. Fact 1: The money you can make.
Fact 2: The difficulty in getting the required education.
 2. Fact 1: The working hours.
Fact 2: The social standing of the occupation.
 3. Fact 1: The good you can do.
Fact 2: The difficulty in getting the required education.
 4. Fact 1: The good you can do.
Fact 2: The social standing of the occupation.
 5. Fact 1: The working hours.
Fact 2: The money you can make.
 6. Fact 1: The money you can make.
Fact 2: The good you can do.
 7. Fact 1: The social standing of the occupation.
Fact 2: The money you can make.
 8. Fact 1: The good you can do.
Fact 2: The working hours.
 9. Fact 1: The working hours.
Fact 2: The difficulty in getting the required education.
 10. Fact 1: The difficulty in getting the required education.
Fact 2: The social standing of the occupation.
11. IF I WERE ABSOLUTELY FREE TO GO INTO ANY KIND OF WORK I WANTED, MY CHOICE WOULD BE: _____.

12. THE TYPE OF WORK I WOULD LIKE TO BE DOING WHEN I AM 30 YEARS OLD IS:

13. REGARDING MY PLANS FOR EDUCATION AFTER I LEAVE HIGH SCHOOL:

- ☐ I plan to get more education after high school.
☐ I do not plan to get more education after high school.

IF PLANNING TO GET MORE EDUCATION:

1. THE NUMBER OF YEARS OF FURTHER EDUCATION I PLAN TO GET IS:

- ☐ two years or less.
☐ three or four years.
☐ five or six years.
☐ seven or more years.

2. THE NAMES AND LOCATIONS OF THE SCHOOLS I AM THINKING ABOUT ATTENDING ARE:

Name of School

Location of School

- | | | |
|-----|--|--|
| (1) | | |
| (2) | | |
| (3) | | |

3. THE COURSES OF STUDY I AM THINKING ABOUT TAKING ARE:

- (1) _____
(2) _____
(3) _____

4. AS FAR AS I KNOW NOW, THE HIGHEST DEGREE I HOPE TO EARN IS:

- ☐ none.
☐ bachelor's degree.
☐ master's degree.
☐ doctor's degree.
☐ other degree.

IF OTHER DEGREE

THE DEGREE I HOPE TO GET IS:

III. ABOUT MY PARENTS

1. MY PARENTS ARE:

- ☐ both living together.
- ☐ both dead.
- ☐ father is dead.
- ☐ mother is dead.
- ☐ divorced.
- ☐ separated.

1A. MY FATHER'S FULL NAME IS: _____

1B. MY MOTHER'S FULL NAME IS: _____

2. MY MOTHER:

- ☐ has no job outside the home.
- ☐ has a part-time job outside the home.
- ☐ has a full-time job outside the home.

3. MY FATHER'S OCCUPATION IS: (or was, if dead or retired) (Specify the kind of work he does and not where he works.) _____

IF FATHER IS A FARMER

MY FATHER IS: ☐ owner ☐ renter ☐ laborer

THE NUMBER OF ACRES MY FATHER OPERATES IS: _____.

4. MY FATHER CONSIDERS HIS OCCUPATION TO BE:

- ☐ completely satisfactory.
- ☐ fairly satisfactory.
- ☐ good enough.
- ☐ not very good.
- ☐ very poor.

5. MY MOTHER CONSIDERS MY FATHER'S OCCUPATION TO BE:

- ☐ completely satisfactory.
- ☐ fairly satisfactory.
- ☐ good enough.
- ☐ not very good.
- ☐ very poor.

6. THE OCCUPATION OF MY FATHER'S FATHER WAS: _____.

7. THE OCCUPATION OF MY MOTHER'S FATHER WAS: _____.

8. THE COUNTRY OF BIRTH OF MY FATHER WAS: _____.

9. THE COUNTRY OF BIRTH OF MY MOTHER WAS: _____.

10. THE COUNTRY OF BIRTH OF MY FATHER'S FATHER WAS: _____.

11. THE COUNTRY OF BIRTH OF MY MOTHER'S FATHER WAS: _____.

12. MY FATHER'S EDUCATION CONSISTED OF:
- ☐ less than 8 grades.
 - ☐ 8 grades.
 - ☐ 9-11 grades.
 - ☐ 12 grades.
 - ☐ some college.
 - ☐ college degree.
13. MY MOTHER'S EDUCATION CONSISTED OF:
- ☐ less than 8 grades.
 - ☐ 8 grades.
 - ☐ 9 - 11 grades.
 - ☐ 12 grades.
 - ☐ some college.
 - ☐ college degree.
14. I BELIEVE MY FATHER'S EDUCATION IS:
- ☐ completely satisfactory.
 - ☐ fairly satisfactory.
 - ☐ good enough.
 - ☐ not very good.
 - ☐ very poor.
15. MY FATHER THINKS THAT THE EDUCATION HE OBTAINED IS:
- ☐ completely satisfactory.
 - ☐ fairly satisfactory.
 - ☐ good enough.
 - ☐ not very good.
 - ☐ very poor.
16. IN COMPARISON TO THE INCOME OF THE PARENTS OF OTHER STUDENTS IN THE HIGH SCHOOL, THE INCOME OF MY PARENTS IS:
- ☐ one of the highest incomes.
 - ☐ higher than average.
 - ☐ just average.
 - ☐ less than average.
 - ☐ one of the lowest incomes.
17. MY PARENTS ARE CONSIDERED BY MOST PEOPLE IN THE COMMUNITY TO BE:
- ☐ very important people.
 - ☐ rather important people.
 - ☐ just average people.
 - ☐ of less than average importance.
 - ☐ not at all important.

IV. ABOUT ME AND MY PARENTS

1. AS TO CONTINUING MY EDUCATION BEYOND HIGH SCHOOL, MY FATHER:
 - ☐ has strongly encouraged me to continue.
 - ☐ has given me some encouragement to continue.
 - ☐ has never said much about it.
 - ☐ feels that I would be better off going to work after high school.
 - ☐ feels that I should quit high school and go to work.
2. AS TO CONTINUING MY EDUCATION BEYOND HIGH SCHOOL, MY MOTHER:
 - ☐ has strongly encouraged me to continue.
 - ☐ has given me some encouragement to continue.
 - ☐ has never said much about it.
 - ☐ feels that I would be better off going to work after high school.
 - ☐ feels that I should quit high school and go to work.
3. AS TO ANY FURTHER HELP FROM MY FOLKS IN GETTING A START OR IN CONTINUING MY SCHOOLING AFTER HIGH SCHOOL, MY PARENTS WOULD BE:
 - ☐ financially able to help me a great deal.
 - ☐ financially able to give me some help.
 - ☐ financially able to give me no help.
4. AS TO FURTHER HELP FROM MY PARENTS AFTER I FINISH HIGH SCHOOL, MY PARENTS WOULD BE:
 - ☐ willing to help me a great deal.
 - ☐ willing to give me some help.
 - ☐ willing to give me no help.
5. AS TO THE KIND OF JOB I GO INTO, MY FATHER:
 - ☐ wants me to have a very important job.
 - ☐ wants me to have a job that is quite a bit better than most jobs around here.
 - ☐ wants me to have a job that is a little bit better than most jobs around here.
 - ☐ feels that the job I take should be as good as most jobs around here.
 - ☐ does not care how good the job I go into is.
6. AS TO THE KIND OF JOB I GO INTO, MY MOTHER:
 - ☐ wants me to have a very important job.
 - ☐ wants me to have a job that is quite a bit better than most jobs around here.
 - ☐ wants me to have a job that is a little bit better than most jobs around here.
 - ☐ feels that the job I take should be as good as most jobs around here.
 - ☐ does not care how good the job I go into is.

7. MY FAMILY IS TOO POOR TO BUY ME THE KIND OF THINGS I NEED:
() Yes () No
8. THE GIRLS I WOULD LIKE TO DATE PREFER TO GO OUT WITH BOYS WHOSE FAMILIES ARE MORE IMPORTANT THAN MINE:
() Yes () No
9. I OFTEN WISH MY FATHER (OR MOTHER, OR GUARDIAN) HAD A BETTER JOB:
() Yes () No
10. I OFTEN WISH MY FATHER WAS A MORE IMPORTANT MAN IN THE COMMUNITY THAN HE IS:
() Yes () No
-

V. ABOUT MY BROTHERS AND SISTERS

(Write "0" if your answer is "none")

1. THE NUMBER OF OLDER BROTHERS I HAVE IS: ____.
2. THE NUMBER OF YOUNGER BROTHERS I HAVE IS: ____.
3. THE NUMBER OF OLDER SISTERS I HAVE IS: ____.
4. THE NUMBER OF YOUNGER SISTERS I HAVE IS: ____.
5. THE NUMBER OF MY OLDER BROTHERS AND SISTERS THAT GRADUATED FROM HIGH SCHOOL IS: ____.
6. THE NUMBER THAT QUIT SCHOOL BEFORE GRADUATING FROM HIGH SCHOOL IS: ____.
7. THE NUMBER THAT HAVE ATTENDED OR ARE ATTENDING COLLEGE IS: ____.

8. BELOW IS THE NAME, SEX, AGE, OCCUPATION AND PLACE OF RESIDENCE OF EACH OF MY BROTHERS AND SISTERS: (Start with the oldest brother or sister and include all brothers and sisters. If in school, put "student." If sister is married and not working outside the home, put "housewife.")

	Name	Male or Female	Age	Occupation	Place of Residence (town and state)
1.					
2.					
3.					
4.					
5.					
6.					

IF YOU HAVE A BROTHER OR SISTER (or more)-

9. COMPARED TO MOST OF MY BROTHERS AND SISTERS, I BELIEVE MY FATHER WAS:

- ☐ much more interested in what I did.
- ☐ a little more interested in what I did.
- ☐ just about equally interested in what each of us did.
- ☐ a little less interested in what I did.
- ☐ much less interested in what I did.

10. COMPARED TO MOST OF MY BROTHERS, I BELIEVE MY MOTHER WAS:

- ☐ much more interested in what I did.
- ☐ a little more interested in what I did.
- ☐ just about equally interested in what each of us did.
- ☐ a little less interested in what I did.
- ☐ much less interested in what I did.

11. COMPARED TO MOST OF MY BROTHERS AND SISTERS, I BELIEVE MY FATHER WAS:

- ☐ much kinder to me.
- ☐ a little kinder to me.
- ☐ about equally kind to each of us.
- ☐ a little less kind to me.
- ☐ much less kind to me.

12. COMPARED TO MOST OF MY BROTHERS AND SISTERS, I BELIEVE MY MOTHER WAS:

- ☐ much kinder to me.
- ☐ a little kinder to me.
- ☐ about equally kind to each of us.
- ☐ a little less kind to me.
- ☐ much less kind to me.

13. COMPARED TO MOST OF MY BROTHERS AND SISTERS, I BELIEVE MY FATHER WAS:

- ☐ much more attentive to me.
- ☐ a little more attentive to me.
- ☐ about equally attentive to each of us.
- ☐ a little less attentive to me.
- ☐ much less attentive to me.

14. COMPARED TO MOST OF MY BROTHERS AND SISTERS, I BELIEVE MY MOTHER WAS:

- ☐ much more attentive to me.
- ☐ a little more attentive to me.
- ☐ about equally attentive to each of us.
- ☐ a little less attentive to me.
- ☐ much less attentive to me.

15. USUALLY I WAS:

- ☐ much more interested in most of my brothers and sisters than they were in me.
- ☐ a little more interested in most of my brothers and sisters than they were in me.
- ☐ about as interested in my brothers and sisters as they were in me.
- ☐ a little less interested in most of my brothers and sisters than they were in me.
- ☐ much less interested in most of my brothers and sisters than they were in me.

VI. ABOUT MY HOUSE

1. OUR HOME IS: ☐ owned ☐ rented.

2. THE NUMBER OF PERSONS WHO LIVE AT OUR HOUSE IS: _____.

3. THE NUMBER OF ROOMS IN OUR HOUSE IS: _____.
(Do not include basements, bathrooms, porches, closets, halls.)

4. THE CONSTRUCTION OF OUR HOUSE IS:

- ☐ brick.
- ☐ unpainted frame.
- ☐ painted frame.
- ☐ other (specify). _____.

5. THE LIGHTING IN OUR HOUSE IS:

- ☐ oil lamps.
- ☐ electric.
- ☐ gas, mantle, or pressure lamps.
- ☐ other or none.

6. THE KIND OF REFRIGERATOR WE HAVE IS:

- ☐ ice.
- ☐ mechanical (gas or electric).
- ☐ other or none.

7. WE HAVE A DEEP FREEZE LOCKER AT OUR HOME: ☐ yes ☐ no.

8. WE HAVE RUNNING WATER IN OUR HOUSE: ☐ yes ☐ no.

9. WE TAKE A DAILY NEWSPAPER: ☐ yes ☐ no.

10. WE HAVE A POWER WASHING MACHINE: ☐ yes ☐ no.

11. WE HAVE A RADIO: ☐ yes ☐ no.

12. WE HAVE A CAR (other than truck): ☐ yes ☐ no.

13. WE HAVE A TELEPHONE: ☐ yes ☐ no.

14. MY FATHER GOES TO CHURCH AT LEAST ONCE A MONTH: ☐ yes ☐ no.

15. MY MOTHER GOES TO CHURCH AT LEAST ONCE A MONTH: ☐ yes ☐ no.

(GO BACK AND CHECK TO SEE IF YOU HAVE ANSWERED EVERY QUESTION).

THANK YOU

LENAWEE COUNTY STUDY OF 17 YR. OLD BOYS
Spring and Summer, 1951

Card 1.1- I.Q. Scores-- IPAT, Test of U: Culture Free Scale No. 1
R.B. Cattell and A.K.S. Cattell, 1950

Column No.
1.1.1-2

APPENDIX III

Card Identification--see digit field (20)
01-Card 1.1 (1st copy in punched 11)
02-Card 1.1

OPERATIONAL DEFINITIONS OF VARIABLES USED IN

THE LENAWE COUNTY STUDY

1.1.3-5

Paraph Identification-- 3 df

1.1.6-7

- THE PUNCH-CARD CODING KEY -

01- Address	08- Dearfield
02- Adrian	09- Dundee
03- Blissfield	10- Highland
04- Brighton	11- Jackson
05- Catholic Central (Adrian)	12- Lake Creek
06- Elletts	13- Lapeer

1.1.8

Test 1, question 1 (T1, Q1)
0- wrong
1- right
2- no answer

1.1.9

T1, Q1, see 1.1.8

1.1.10

T1, Q1, ditto

1.1.11

T1, Q1, ditto

1.1.12

T1, Q1, ditto

1.1.13

T1, Q1, ditto

1.1.14

T1, Q1, ditto

1.1.15

T1, Q1, ditto

1.1.16

T1, Q1, ditto

1.1.17

T1, Q1, ditto

1.1.18

T1, Q1, ditto

1.1.19

T1, Q1, ditto

1.1.20

T1, Q1, ditto

LENAWEE COUNTY STUDY OF 17 YR. OLD BOYS.
Spring and Summer, 1957

Card 1.1: I.Q. Scores-- IPAT, Test of G: Culture Free Scale 3A, by
R.B. Cattell and A.K.S. Cattell, 1950.

Column No.

1.1.1-2

Card identification--two digit field (2df)

01- Card 1.1 (This card is punched 01)

02- Card 1.2

03- Card 1.3

:

nn- Card 1.nn

1.1.3-5

Person identification-- 3 df

1.1.6-7

School identification-- 2 df

01- Addison

07- Deerfield

02- Adrian

08- Hudson

03- Blissfield

09- Morenci

04- Britton

10- Onsted

05- Catholic Central (Adrian)

11- Sand Creek

06- Clinton

12- Tecumseh

1.1.8

Test 1, question 1. (T1, q1.)

0- wrong

1- right

Y- no answer

1.1.9

T1, q2: see 1.1.8

1.1.10

T1, q3: ditto

1.1.11

T1, q4: ditto

1.1.12

T1, q5: ditto

1.1.13

T1, q6: ditto

1.1.14

T1, q7: ditto

1.1.15

T1, q8: ditto

1.1.16

T1, q9: ditto

1.1.17

T1, q10: ditto

1.1.18

T1, q11: ditto

1.1.19

T1, q12: ditto

1.1.20

T1, q13: ditto

1.1.21	T2, q1:	see 1.1.8	1.1.50	Th, q1:	see 1.1.8
1.1.22	Blank		1.1.51	Th, q2:	ditto
1.1.23	T2, q2:	ditto	1.1.52	Th, q3:	ditto
1.1.24	T2, q3:	ditto	1.1.53	Th, q4:	ditto
1.1.25	T2, q4:	ditto	1.1.54	Th, q5:	ditto
1.1.26	T2, q5:	ditto	1.1.55	Th, q6:	ditto
1.1.27	T2, q6:	ditto	1.1.56	Th, q7:	ditto
1.1.28	T2, q7:	ditto	1.1.57	Th, q8:	ditto
1.1.29	T2, q8:	ditto	1.1.58	Th, q9:	ditto
1.1.30	T2, q9:	ditto	1.1.59	Th, q10:	ditto
1.1.31	T2, q10:	ditto	1.1.60-61	Test 1 total score 2df	
1.1.32	T2, q11:	ditto		00-	zero points
1.1.33	T2, q12:	ditto		01-	one point
1.1.34	T2, q13:	ditto		:	
1.1.35	T2, q14:	ditto		13-	thirteen points
1.1.36	T3, q1:	ditto		YY-	test not attempted
1.1.37	Blank		1.1.62-63	Test 2 total score 2df	
1.1.38	T3, q2:	ditto		00-	zero points
1.1.39	T3, q3:	ditto		01-	one point
1.1.40	T3, q4:	ditto		:	
1.1.41	T3, q5:	ditto		14-	fourteen points
1.1.42	T3, q6:	ditto		YY-	test not attempted
1.1.43	T3, q7:	ditto	1.1.64-65	Test 3 total score 2df	
1.1.44	T3, q8:	ditto		00-	zero points
1.1.45	T3, q9:	ditto		01-	one point
1.1.46	T3, q10:	ditto		:	
1.1.47	T3, q11:	ditto		13-	thirteen points
1.1.48	T3, q12:	ditto		YY-	test not attempted
1.1.49	T3, q13:	ditto	1.1.66-67	Test 4 total score 2df	
				00-	zero points
				01-	one point
				:	
				10-	ten points
				YY-	test not attempted
			1.1.68-69	Total raw score 2df	
				00-	zero points
				01-	one point
				:	
				50-	fifty points
				YY-	test 1, test 2, test 3, or test 4, not attempted
			1.1.70-72	Total I.Q. score 3 df	
				000-	zero points
				001-	one point
				:	
				999-	nine hundred, ninety-nine
				YYY-	Test 1, Test 2, Test 3, or Test 4, not attempted

Card 1.2: Occupational Aspiration Scale Scores
A. O. Haller, 1957

Column No.

- 1.2.1-2 Card identification 2 df
01- Card 1.1
02- Card 1.2
03- Card 1.3
:
nn- Card 1.nn
- 1.2.3-5 Person identification 3 df
- 1.2.6 Question 1: First Score for realistic choice level at end of schooling
0- zero points
1- one point
:
9- nine points
Y- no answer
- 1.2.7 Question 2: First Score for idealistic choice level at end of schooling
See 1.2.6
- 1.2.8 Question 3: Second Score for realistic choice level at end of schooling
See 1.2.6
- 1.2.9 Question 4: Second Score for idealistic choice level at end of schooling
see 1.2.6
- 1.2.10 Question 5: First score for realistic choice level at age 30
see 1.2.6
- 1.2.11 Question 6: First score for idealistic choice level at age 30
see 1.2.6
- 1.2.12 Question 7: Second score for realistic choice level at age 30
see 1.2.6
- 1.2.13 Question 8: Second score for idealistic choice level at age 30
- 1.2.14-15 Sum of scores for Questions 1 and 3: realistic choice level at end of schooling 2 df
00- zero points
01- one point
:
18- eighteen points
YY- no answer
- 1.2.16-17 Sum of scores for Questions 2 and 4: idealistic choice level at end of schooling 2 df
see 1.2.14-15
- 1.2.18-19 Sum of scores for Questions 5 and 7: realistic choice level at age 30
see 1.2.14-15
- 1.2.20-21 Sum of scores for Questions 6 and 8: idealistic choice level at age 30
see 1.2.14-15

- 1.2.22-23 Sum of scores for Questions 1, 3, 5, and 7: realistic choice level
 00- zero points
 01- one point
 :
 36- thirty-six points
 YY- no answer
- 1.2.24-25 Sum of scores for Questions 2, 4, 6, and 8: idealistic choice level
 00- zero points
 01- one point
 :
 36- thirty-six points
 YY- no answer
- 1.2.26-27 Sum of scores for Questions 1 through 8: level of occupational aspiration
 00- zero points
 01- one point
 :
 72- seventy-two points
 YY- no answer
- 1.2.28-29 BLANK
- 1.2.30-31 Sum of T-scores for Questions 1 through 8: level of occupational aspiration
 20- twenty points
 21- twenty-one points
 :
 80- eighty points
 YY- no answer
- 1.2.32-33 Question 1: First T-score for realistic choice level at end of schooling
 20- twenty points
 21- twenty-one points
 :
 80- eighty points
 YY- no answer
- 1.2.34-35 Question 2: First T-score for idealistic choice level at end of schooling
 20- twenty points
 21- twenty-one points
 :
 80- eighty points
 YY- no answer

- 1.2.36-37 Question 3: Second T-score for realistic choice level at end of schooling
 20- twenty points
 21- twenty-one points
 :
 80- eighty points
 YY- no answer
 Computed from 1.2.34-35
- 1.2.38-39 Question 4: Second T-score for idealistic choice level at end of schooling
 20- twenty points
 21- twenty-one points
 :
 80- eighty points
 YY- no answer
- 1.2.40-41 Question 5: First T-score for realistic choice level at age 30
 20- twenty points
 21- twenty-one points
 :
 80- eighty points
 YY- no answer
 Computed from 1.2.20-21 See 1.2.42-43
- 1.2.42-43 Question 6: First T-score for idealistic choice level at age 30
 20- twenty points
 21- twenty-one points
 :
 80- eighty points
 YY- no answer
 Split-half A
 80 - zero points
- 1.2.44-45 Question 7: Second T-score for realistic choice level at age 30
 20- twenty points
 21- twenty-one points
 :
 80- eighty points
 YY- no answer
 Split-half B
 80 - zero points
- 1.2.46-47 Question 8: Second T-score for idealistic choice level at age 30
 20- twenty points
 21- twenty-one points
 :
 80- eighty points
 YY- no answer
 Split-half B
 80 - zero points
 Computed from 1.2.42-43
 See 1.2.44-45

Column No.

- 1.2.48-49 T-scores for realistic choice level at end of schooling. (2df)
Computed from 1.2.14-15
20 - twenty points
21 - twenty-one points
:
80 - eighty points
yy - no answer
- 1.2.50-51 T-scores: Idealistic choice level at end of schooling. (2df)
Computed from 1.2.16-17 See 1.2.48-49
- 1.2.52-53 T-scores: Realistic choice level at age 30. (2df)
Computed from 1.2.18-19 See 1.2.48-49
- 1.2.54-55 T-scores: Idealistic choice level at age 30. (2df)
Computed from 1.2.20-21 See 1.2.48-49
- 1.2.56-57 T-scores: Realistic choice level. (2df)
Computed from 1.2.22-23 See 1.2.48-49
- 1.2.58-59 T-scores: Idealistic choice level. (2df)
Computed from 1.2.24-25 See 1.2.48-49
- 1.2.60-61 Sum of scores for questions 1, 2, 5, 6: Split-half A
00 - zero points
01 - one point
:
36 - thirty-six points
YY - no answer to one or all of Q 1, 2, 5, 6
- 1.2.62-63 Sum of scores for questions 3, 4, 7, 8: Split-half B
See 1.2.60-61
- 1.2.64-65 T-Scores: Split-half A
Computed from 1.2.60-61
20 - twenty points
21 - twenty-one points
:
80 - eighty points
YY - no answer to one or all of summed questions
- 1.2.66-67 T-Scores: Split-half B
Computed from 1.2.62-63
See 1.2.64-65

Card 1.3 IPAT, The 16 P.F. Test, Form B, 1950

Column No.

1.3.1-2	Card identification 2 df			
	01- card 1.1			
	02- card 1.2			
	03- card 1.3 (<u>This card is punched 03</u>)			
	:			
	nn- card 1.nn			
1.3.3-5	Person identification 3 df			
1.3.6	Question 1 (q1)			
	0- zero points			
	1- one point			
	2- two points			
	Y- no answer			
1.3.7	q2	ditto	1.3.26	q21, ditto
1.3.8	q3	ditto	1.3.27	q22 ditto
1.3.9	q4	ditto	1.3.28	q23 ditto
1.3.10	q5	ditto	1.3.29	q24 ditto
1.3.11	q6	ditto	1.3.30	q25
1.3.12	q7	ditto		0- zero points
1.3.13	q8	ditto		1- one point
1.3.14	q9	ditto		Y- no answer
1.3.15	q10	ditto	1.3.31	q26 see 1.3.6
1.3.16	q11	ditto	1.3.32	q27 ditto
1.3.17	q12	ditto	1.3.33	q28 ditto
1.3.18	q13	ditto	1.3.34	q29 ditto
1.3.19	q14	ditto	1.3.35	q30 ditto
1.3.20	q15	ditto	1.3.36	q31 ditto
1.3.21	q16	ditto	1.3.37	q32 ditto
1.3.22	q17	ditto	1.3.38	q33 ditto
1.3.23	q18	ditto	1.3.39	q34 ditto
1.3.24	q19	ditto	1.3.40	q35 ditto
1.3.25	q20	ditto	1.3.41	q36 ditto
			1.3.42	q37 ditto
			1.3.43	q38 ditto

PAGE 6

1.3.44	q39	see 1.3.6	1.3.73	q68	ditto
1.3.45	q40	ditto	1.3.74	q69	ditto
1.3.46	q41	ditto	1.3.75	q70	ditto
1.3.47	q42	ditto	1.3.76	q71	ditto
1.3.48	q43	ditto	1.3.77	q72	ditto
1.3.49	q44	ditto	1.3.78	q73	see 1.3.30
1.3.50	q45	ditto	1.3.79	q74	see 1.3.6
1.3.51	q46	ditto	1.3.80	q75	ditto
1.3.52	q47	ditto			
1.3.53	q48	see 1.3.30			
1.3.54	q49	see 1.3.6			
1.3.55	q50	ditto			
1.3.56	q51	ditto			
1.3.57	q52	ditto			
1.3.58	q53	ditto			
1.3.59	q54	ditto			
1.3.60	q55	ditto			
1.3.61	q56	ditto			
1.3.62	q57	ditto			
1.3.63	q58	ditto			
1.3.64	q59	ditto			
1.3.65	q60	ditto			
1.3.66	q61	ditto			
1.3.67	q62	ditto			
1.3.68	q63	ditto			
1.3.69	q64	ditto			
1.3.70	q65	ditto			
1.3.71	q66	ditto			
1.3.72	q67	ditto			

PAGE 1

Card 1.4

IPAT, The 16 P.F. Test, Form B, 1950 (continued from Card 1.3)

Column No.

1.4.1-2

Card identification 2 df

01- card 1.1

02- card 1.2

04- card 1.4 (this card is punched 04)

:

nn- card 1.nn

1.4.3-5

Person identification 3 df

1.4.6

Question 76 see 1.3.6

1.4.7

q77 ditto 1.4.29 q99 see 1.3.6

1.4.8

q78 ditto 1.4.30 q100 ditto

1.4.9

q79 ditto 1.4.31 q101 ditto

1.4.10

q80 ditto 1.4.32 q102 ditto

1.4.11

q81 ditto 1.4.33 q103 ditto

1.4.12

q82 ditto 1.4.34 q104 see 1.3.30

1.4.13

q83 ditto 1.4.35 q105 see 1.3.6

1.4.14

q84 ditto 1.4.36 q106 see 1.3.30

1.4.15

q85 ditto 1.4.37 q107 see 1.3.6

1.4.16

q86 ditto 1.4.38 q108 ditto

1.4.17

q87 ditto 1.4.39 q109 ditto

1.4.18

q88 ditto 1.4.40 q110 ditto

1.4.19

q89 ditto 1.4.41 q111 ditto

1.4.20

q90 ditto 1.4.42 q112 ditto

1.4.21

q91 ditto 1.4.43 q113 ditto

1.4.22

q92 ditto 1.4.44 q114 ditto

1.4.23

q93 ditto 1.4.45 q115 ditto

1.4.24

q94 ditto 1.4.46 q116 ditto

1.4.25

q95 ditto 1.4.47 q117 ditto

1.4.26

q96 ditto 1.4.48 q118 ditto

1.4.27

q97 ditto 1.4.49 q119 ditto

1.4.28

q98 ditto 1.4.50 q120 ditto

PAGE 8

1.4.51	q121	see 1.3.6	1.5.27	q173	see 1.3.6
1.4.52	q122	see 1.3.30	1.5.28	q173	see 1.3.30
1.4.53	q123	see 1.3.6	1.5.29	q174	see 1.3.6
1.4.54	q124	ditto	1.5.30	q175	see 1.3.30
1.4.55	q125	ditto	1.5.31	q176	see 1.3.6
1.4.56	q126	ditto	1.5.32	q177	see 1.3.30
1.4.57	q127	see 1.3.30	1.5.33	q178	see 1.3.6
1.4.58	q128	see 1.3.6	1.5.34	q179	ditto
1.4.59	q129	see 1.3.6	1.5.35	q180	ditto
1.4.60	q130	ditto	1.5.36	q181	ditto
1.4.61	q131	ditto	1.5.37	q182	see 1.3.30
1.4.62	q132	ditto	1.5.38	q183	see 1.3.6
1.4.63	q133	see 1.3.30	1.5.39	q184	ditto
1.4.64	q134	see 1.3.6	1.5.40	q185	ditto
1.4.65	q135	ditto	1.5.41	q186	ditto
1.4.66	q136	ditto	1.5.42	q187	ditto
1.4.67	q137	ditto	1.5.43-44	Factor 4, the score 2 of (Cynobolonia vs. Schizobolonia) 60% score	
1.4.68	q138	ditto	20-	Dewey	
1.4.69	q139	ditto	21-	see or write questions answered	
1.4.70	q140	ditto			
1.4.71	q141	ditto			
1.4.72	q142	ditto			
1.4.73	q143	ditto			
1.4.74	q144	ditto			
1.4.75	q145	ditto			
1.4.76	q146	ditto			
1.4.77	q147	see 1.3.30			
1.4.78	q148	see 1.3.6			
1.4.79	q149	ditto			
1.4.80	q150	ditto			

PAGE 9

Card 1.5 IPAT, The 16 P.F. Test, Form B, 1950 (continued from Cards 1.3 and 1.4)

Column No.

1.5.1-2

Card identification 2 df

01- card 1.1

02- card 1.2

:

05- card 05 (This card is punched 05)

:

nn- card nn

1.5.3-5

Person identification 3 df

1.5.6

Question 151 see 1.3.6

1.5.7

ql52 ditto 1.5.27 ql72 see 1.3.6

1.5.8

ql53 ditto 1.5.28 ql73 see 1.3.30

1.5.9

ql54 ditto 1.5.29 ql74 see 1.3.6

1.5.10

ql55 ditto 1.5.30 ql75 see 1.3.30

1.5.11

ql56 ditto 1.5.31 ql76 see 1.3.6

1.5.12

ql57 ditto 1.5.32 ql77 see 1.3.30

1.5.13

ql58 ditto 1.5.33 ql78 see 1.3.6

1.5.14

ql59 ditto 1.5.34 ql79 ditto

1.5.15

ql60 ditto 1.5.35 ql80 ditto

1.5.16

ql61 ditto 1.5.36 ql81 ditto

1.5.17

ql62 ditto 1.5.37 ql82 see 1.3.30

1.5.18

ql63 ditto 1.5.38 ql83 see 1.3.6

1.5.19

ql64 ditto 1.5.39 ql84 ditto

1.5.20

ql65 ditto 1.5.40 ql85 ditto

1.5.21

ql66 ditto 1.5.41 ql86 ditto

1.5.22

ql67 ditto 1.5.42 ql87 ditto

1.5.23

ql68 ditto 1.5.43-44 Factor A, raw score 2 df

1.5.24

ql69 ditto (Cyclothymia vs. Schizothymia)

1.5.25

ql70 ditto 00- zero

1.5.26

ql71 ditto :
20- twenty
YY- one or more questions
unanswered

- 1.5.45-46 Factor B, raw score 2 df (General intelligence vs mental defect)
 00- zero
 :
 13- thirteen
 YY- one or more questions unanswered
- 1.5.47-48 Factor C, raw score 2 df (Emotional stability or ego strength
 vs dissatisfied emotionality)
 00- zero
 :
 26- twenty-six
 YY- one or more questions unanswered
- 1.5.49-50 Factor E, raw score 2 df (Dominance or Ascendancy vs Submission)
 see 1.5.47-48
- 1.5.51-52 Factor F, raw score 2 df (Surgency vs desurgency, or depressive
 anxiety) see 1.5.47-48
- 1.5.53-54 Factor G, raw score 2 df (Character or super-ego strength vs. lack
 of internal standards)
 see 1.5.43-44
- 1.5.55-56 Factor H, raw score 2 df (Adventurous autonomic resilience vs.
 inherent, withdrawn schizothymia)
 see 1.5.47-48
- 1.5.57-58 Factor I, raw score 2 df (Emotional sensitivity vs. tough maturity)
 see 1.5.43-44
- 1.5.59-60 Factor L., raw score 2 df (Paranoid schizothymia vs trustful
 altruism)
 see 1.5.43-44
- 1.5.61-62 Factor M, raw score 2 df (Hysteric unconcern or "bohemianism," vs
 practical concernedness)
 see 1.5.47-48
- 1.5.63-64 Factor N, raw score 2 df (Sophistication vs. rough simplicity)
 see 1.5.43-44
- 1.5.65-66 Factor O., raw scores 2 df (Anxious insecurity vs placid self-
 confidence)
 see 1.5.47-48
- 1.5.67-68 Factor Q¹, raw scores 2 df (Radicalism vs. Conservatism)
 see 1.5.43-44
- 1.5.69-70 Factor Q², raw scores 2 df (Independent self-sufficiency vs lack
 of resolution)
 see 1.5.43-44
- 1.5.71-72 Factor Q³, raw scores 2 df (Will control and character stability)
 see 1.5.43-44
- 1.5.73-74 Factor Q⁴, raw scores 2 df (Nervous tension)
 see 1.5.47-48

Card 1.6 MSU Work-Beliefs Check-List, 1957

Column No.

1.6.1-2

Card identification 2 df

01- card 1.1

02- card 1.2

:

06- card 1.6 (This card is punched 06)

:

nn- card 1.nn

1.6.3-5

Person identification 3 df

1.6.6

Question 1.1

1.6.27

q3.6

see 1.6.6

0- zero points

1- one point

Y- no answer

1.6.28

q4.1

ditto

1.6.29

q4.2

ditto

1.6.7

q1.2

see 1.6.6

1.6.30

q4.3

ditto

1.6.8

q1.3

ditto

1.6.31

q4.4

ditto

1.6.9

q1.4

ditto

1.6.32

q4.5

ditto

1.6.10

q1.5

ditto

1.6.33

q4.6

ditto

1.6.11

q1.6

ditto

1.6.34

q4.7

ditto

1.6.12

q1.7

ditto

1.6.35

q5.1

ditto

1.6.13

q1.8

ditto

1.6.36

q5.2

ditto

1.6.14

q2.1

ditto

1.6.37

q5.3

ditto

1.6.15

q2.2

ditto

1.6.38

q5.4

ditto

1.6.16

q2.3

ditto

1.6.39

q5.5

ditto

1.6.17

q2.4

ditto

1.6.40

q5.6

ditto

1.6.18

q2.5

ditto

1.6.41

q5.7

ditto

1.6.19

q2.6

ditto

1.6.42

q5.8

ditto

1.6.20

q2.7

ditto

1.6.43

q6.1

ditto

1.6.21

q2.8

ditto

1.6.44

q6.2

ditto

1.6.22

q3.1

ditto

1.6.45

q6.3

ditto

1.6.23

q3.2

ditto

1.6.46

q6.4

ditto

1.6.24

q3.3

ditto

1.6.47

q6.5

ditto

1.6.25

q3.4

ditto

1.6.48

q6.6

ditto

1.6.26

q3.5

ditto

1.6.49

q6.7

ditto

- 1.6.50 Belief Value Area 1. raw score (Belief that work is of expressive value vs. instrumental value)
0- zero points (instrumental value)
1- one point
:
8- eight points (intrinsic value)
Y - one or more 1. questions unanswered
- 1.6.51 Belief Value Area 2. raw score (Positive vs. negative evaluation of structured time)
0- zero points (negative evaluation)
1- one point
:
8- eight points (positive evaluation)
Y- one or more 2. questions unanswered
- 1.6.52 Belief Value Area 3, raw score (Positive vs. negative evaluation of physical mobility)
0- zero points (negative evaluation)
1- one point
:
6- six points (positive evaluation)
Y- one or more 3. questions unanswered
- 1.6.53 Belief Value Area 4. (positive vs. negative evaluation of change)
0- zero points (negative evaluation)
1- one point
:
7- seven points (positive evaluation)
Y- one or more 4. questions unanswered
- 1.6.54 Belief Value Area 5. (Belief in internal vs. external determinants of events)
0- zero points (external determination)
1- one point
:
8- eight points (internal determination)
Y- one or more 5. questions unanswered
- 1.6.55 Belief Value Area 6. (Positive vs. negative evaluation of delayed gratification)
0- zero points (negative evaluation)
1- one point
:
7- seven points (positive determination)
Y- one or more 6. questions unanswered

Card 1.7 California Test of Personality, Secondary Form AA, 1953 revision,
E. W. Tiegs, W. W. Clark, and L. P. Thorpe

Column No.

1.7.1-2

Card identification 2 df

01- card 1.1

02- card 1.2

:

07- card 1.7 (This card is punched 07)

:

nn- card 1.nn

1.7.3-5

Person identification 3 df

1.7.6

Question 1

0- wrong ("maladjusted" response)

1- right ("adjusted" response)

Y- no answer

1.7.7	q2	see 1.76	1.7.27	q22	ditto
1.7.8	q3	ditto	1.7.28	q23	ditto
1.7.9	q4	ditto	1.7.29	q24	ditto
1.7.10	q5	ditto	1.7.30	q25	ditto
1.7.11	q6	ditto	1.7.31	q26	ditto
1.7.12	q7	ditto	1.7.32	q27	ditto
1.7.13	q8	ditto	1.7.33	q28	ditto
1.7.14	q9	ditto	1.7.34	q29	ditto
1.7.15	q10	ditto	1.7.35	q30	ditto
1.7.16	q11	ditto	1.7.36	q31	ditto
1.7.17	q12	ditto	1.7.37	q32	ditto
1.7.18	q13	ditto	1.7.38	q33	ditto
1.7.19	q14	ditto	1.7.39	q34	ditto
1.7.20	q15	ditto	1.7.40	q35	ditto
1.7.21	q16	ditto	1.7.41	q36	ditto
1.7.22	q17	ditto	1.7.42	q37	ditto
1.7.23	q18	ditto	1.7.43	q38	ditto
1.7.24	q19	ditto	1.7.44	q39	ditto
1.7.25	q20	ditto	1.7.45	q40	ditto
1.7.26	q21	ditto	1.7.46	q41	ditto

PAGE 14

1.7.47	q42	see 1.7.6	1.7.76	q71	see 1.7.6
1.7.48	q43	ditto	1.7.77	q72	ditto
1.7.49	q44	ditto	1.7.78	q73	ditto
1.7.50	q45	ditto	1.7.79	q74	ditto
1.7.51	q46	ditto	1.7.80	q75	ditto
1.7.52	q47	ditto			
1.7.53	q48	ditto			
1.7.54	q49	ditto			
1.7.55	q50	ditto			
1.7.56	q51	ditto			
1.7.57	q52	ditto			
1.7.58	q53	ditto			
1.7.59	q54	ditto			
1.7.60	q55	ditto			
1.7.61	q56	ditto			
1.7.62	q57	ditto			
1.7.63	q58	ditto			
1.7.64	q59	ditto			
1.7.65	q60	ditto			
1.7.66	q61	ditto			
1.7.67	q62	ditto			
1.7.68	q63	ditto			
1.7.69	q64	ditto			
1.7.70	q65	ditto			
1.7.71	q66	ditto			
1.7.72	q67	ditto			
1.7.73	q68	ditto			
1.7.74	q69	ditto			
1.7.75	q70	ditto			

Card 1.8 California Test of Personality, Secondary Form AA (continued)

Column No.

1.8.1-2

Card identification 2 df

01- card 1.1

02- card 1.2 ditto

:

08- card 1.8 (This card is punched 08)

:

nn- card 1.nn ditto

1.8.3-5

Person identification 3 df

1.8.6	q76	see 1.7.6	1.8.30	q100	see 1.7.6
1.8.7	q77	ditto	1.8.31	q101	ditto
1.8.8	q78	ditto	1.8.32	q102	ditto
1.8.9	q79	ditto	1.8.33	q103	ditto
1.8.10	q80	ditto	1.8.34	q104	ditto
1.8.11	q81	ditto	1.8.35	q105	ditto
1.8.12	q82	ditto	1.8.36	q106	ditto
1.8.13	q83	ditto	1.8.37	q107	ditto
1.8.14	q84	ditto	1.8.38	q108	ditto
1.8.15	q85	ditto	1.8.39	q109	ditto
1.8.16	q86	ditto	1.8.40	q110	ditto
1.8.17	q87	ditto	1.8.41	q111	ditto
1.8.18	q88	ditto	1.8.42	q112	ditto
1.8.19	q89	ditto	1.8.43	q113	ditto
1.8.20	q90	ditto	1.8.44	q114	ditto
1.8.21	q91	ditto	1.8.45	q115	ditto
1.8.22	q92	ditto	1.8.46	q116	ditto
1.8.23	q93	ditto	1.8.47	q117	ditto
1.8.24	q94	ditto	1.8.48	q118	ditto
1.8.25	q95	ditto	1.8.49	q119	ditto
1.8.26	q96	ditto	1.8.50	q120	ditto
1.8.27	q97	ditto	1.8.51	q121	ditto
1.8.28	q98	ditto	1.8.52	q122	ditto
1.8.29	q99	ditto			

1.8.53	ql23	see 1.7.6
1.8.54	ql24	ditto
1.8.55	ql25	ditto
1.8.56	ql26	ditto
1.8.57	ql27	ditto
1.8.58	ql28	ditto
1.8.59	ql29	ditto
1.8.60	ql30	ditto
1.8.61	ql31	ditto
1.8.62	ql32	ditto
1.8.63	ql33	ditto
1.8.64	ql34	ditto
1.8.65	ql35	ditto
1.8.66	ql36	ditto
1.8.67	ql37	ditto
1.8.68	ql38	ditto
1.8.69	ql39	ditto
1.8.70	ql40	ditto
1.8.71	ql41	ditto
1.8.72	ql42	ditto
1.8.73	ql43	ditto
1.8.74	ql44	ditto
1.8.75	ql45	ditto
1.8.76	ql46	ditto
1.8.77	ql47	ditto
1.8.78	ql48	ditto
1.8.79	ql49	ditto
1.8.80	ql50	ditto

1.9.28	ql73	see 1.7.6
1.9.29	ql74	ditto
1.9.30	ql75	ditto
1.9.31	ql76	ditto
1.9.32	ql77	ditto
1.9.33	ql78	ditto
1.9.34	ql79	ditto
1.9.35	ql80	ditto
1.9.36-37	Subtest 9 (Self-reliance)	see score 2 of 01- zero points 02- one point 10- various points 11- one or more questions answered
1.9.38-39	Subtest 10 (Sense of personal worth) see score 2 of see 1.9.36-37	
1.9.40-41	Subtest 11 (Sense of personal freedom) see score 2 of see 1.9.36-37	
1.9.42-43	Subtest 12 (Feeling of belonging) see score 2 of see 1.9.36-37	
1.9.44-45	Subtest 13 (Understanding emotions) see score 2 of see 1.9.36-37	
1.9.46-47	Subtest 14 (Mature sympathy) see score 2 of see 1.9.36-37	

Card 1.9 California-Test of Personality, Secondary Form AA (continued)

Column No.

1.9.1-2

Card identification 2 df

01- card 1.1

02- card 1.2

:

09- card 1.9 (This card is punched 09)

:

nn- card 1.nn

1.9.3-5

Person identification 3 df

1.9.6

ql51

see 1.7.6

1.9.28

ql73

see 1.7.6

1.9.7

ql52

ditto

1.9.29

ql74

ditto

1.9.8

ql53

ditto

1.9.30

ql75

ditto

1.9.9

ql54

ditto

1.9.31

ql76

ditto

1.9.10

ql55

ditto

1.9.32

ql77

ditto

1.9.11

ql56

ditto

1.9.33

ql78

ditto

1.9.12

ql57

ditto

1.9.34

ql79

ditto

1.9.13

ql58

ditto

1.9.35

ql80

ditto

1.9.14

ql59

ditto

1.9.36-37 Subtest 1A (Self-reliance)

raw score 2 df

00- zero points

01- one point

:

15- fifteen points

YY- one or more questions

unanswered

1.9.15

ql60

ditto

1.9.16

ql61

ditto

1.9.17

ql62

ditto

1.9.18

ql63

ditto

1.9.38-39 Subtest 1B (Sense of personal

worth) raw score 2 df

see 1.9.36-37

1.9.19

ql64

ditto

1.9.20

ql65

ditto

1.9.40-41 Subtest 1C (Sense of

personal freedom) raw score

2 df

see 1.9.36-37

1.9.21

ql66

ditto

1.9.22

ql67

ditto

1.9.23

ql68

ditto

1.9.42-43 Subtest 1D (Feeling of

belonging) raw score 2 df

see 1.9.36-37

1.9.24

ql69

ditto

1.9.25

ql70

ditto

1.9.44-45 Subtest 1E (Withdrawing

tendencies) raw score 2 df

see 1.9.36-37

1.9.26

ql71

ditto

1.9.27

ql72

ditto

1.9.46-47 Subtest 1F (Nervous symptoms)

raw score 2 df

see 1.9.36-37

Card 1.10 I.9. Scores- Content Responses to IPAT Test of G. Culture Free,
Scale 30. R.E. Cattell and A.E.S. Cattell (continued from Card 1.2)

- 1.9.48-49 Subtest 2A (Social standards) raw score 2 df
see 1.9.36-37
- 1.9.50-51 Subtest 2B (Social skills) raw score 2 df
see 1.9.36-37
- 1.9.52-53 Subtest 2C (Anti-social tendencies) raw score 2 df
see 1.9.36-37
- 1.9.54-55 Subtest 2D (Family relations) raw score 2 df
see 1.9.36-37
- 1.9.56-57 Subtest 2E (School relations) raw score 2 df
see 1.9.36-37
- 1.9.58-59 Subtest 2F (Community relations) raw scores 2 df
see 1.9.36-37
- 1.9.60-61 Personal adjustment raw scores - sum of Subtests 1A-1F 2 df
00- zero points
01- one point
:
90- ninety points
YY- one or more questions unanswered
- 1.9.62-63 Social adjustment raw scores - sum of subtests 2A-2F 2 df
see 1.9.60-61
- 1.9.64-65 Total adjustment raw scores - sum of all subtest scores 3 df
000- zero points
001- one point
:
180- one hundred eighty points
YYY- one or more questions unanswered

Card 1.10 I.Q. Scores- Content Responses to IPAT Test of G, Culture Free,
Scale 3A, R.B. Cattell and A.K.S. Cattell (continued from Card 1.1)

Column No.

1.10.1-2	Card Identification 2 df		
	01- card 1.1		
	02- card 1.2		
	:		
	10- card 1/10 (<u>This card is punched 10</u>)		
	:		
	nn- card 1.nn		
1.10.3-5	Person identification 3 df		
1.10.6	Test 1 question 1 (T1, q1)		
	1- response a		
	2- response b		
	1.10.24	T2, q ⁶	see 1.10.19
	3- response c		
	1.10.25	T2, q ⁷	ditto
	4- response d		
	1.10.26	T2, q ⁸	ditto
	5- response e		
	6- response f		
	Y- no response		
1.10.7	T1, q ²	see 1.10.6	
1.10.8	T1, q ³	ditto	
1.10.9	T1, q ⁴	ditto	
1.10.10	T1, q ⁵	ditto	
1.10.11	T1, q ⁶	ditto	
1.10.12	T1, q ⁷	ditto	
1.10.13	T1, q ⁸	ditto	
1.10.14	T1, q ⁹	ditto	
1.10.15	T1, q ¹⁰	ditto	
1.10.16	T1, q ¹¹	ditto	
1.10.17	T1, q ¹²	ditto	
1.10.18	T1, q ¹³	ditto	
1.10.19	T2, q1 (double response)		
	0- a and b	1.10.33	T3, q ¹ see 1.10.6
	1- a and c	1.10.34	T3, q ² ditto
	2- a and d	1.10.35	T3, q ³ ditto
	3- a and e	1.10.36	T3, q ⁴ ditto
	4- b and a	1.10.37	T3, q ⁵ ditto
	5- b and d	1.10.38	T3, q ⁶ ditto
	6- b and e	1.10.39	T3, q ⁷ ditto
	7- c and d	1.10.40	T3, q ⁸ ditto
	8- c and e	1.10.41	T3, q ⁹ ditto
	9- d and e	1.10.42	T3, q ¹⁰ ditto
	Y- single or no response	1.10.43	T3, q ¹¹ ditto
1.10.20	T2, q ²	1.10.44	T3, q ¹² ditto
1.10.21	T2, q ³		
1.10.22	T2, q ⁴		
1.10.23	T2, q ⁵		

- 1.10.45 T3, q¹³ see 1.10.6
- 1.10.46 T4, q¹
 1- response a
 2- response b
 3- response c
 4- response d
 5- response e
 Y- no response
- 1.10.47 T4, q² see 1.10.46
- 1.10.48 T4, q³ ditto
- 1.10.49 T4, q⁴ ditto
- 1.10.50 T4, q⁵ ditto
- 1.10.51 T4, q⁶ ditto
- 1.10.52 T4, q⁷ ditto
- 1.10.53 T4, q⁸ ditto
- 1.10.54 T4, q⁹ ditto
- 1.10.55 T4, q¹⁰ ditto
- 1.10.56-57 Test 1: Total number of questions attempted (i.e., total number of questions to which ego responded, whether his response was correct or incorrect.) 2 df
 01- one attempted
 02- two attempted
 :
 13- thirteen attempted
 YY- Test 1 not taken (i.e., none attempted)
- 1.10.58-59 Test 2: Total number of questions attempted (i.e., total number of questions to which ego responded, whether his response was correct or incorrect) 2 df
 01- one attempted
 02- two attempted
 :
 14- fourteen attempted
 YY- Test 2 not taken (i.e., none attempted)
- 1.10.60-61 Test 3: Total number of questions attempted (i.e., total number of questions to which ego responded, whether his response was correct or incorrect.) 2 df
 01- one attempted
 02- two attempted
 :
 13- thirteen attempted
 YY- Test 3 not taken (i.e., none attempted)

- 1.10.62-63 Test 4: Total number of questions attempted (i.e., total number of questions to which ego responded, whether his response was correct or incorrect.) 2 df
 01- one attempted
 02- two attempted
 :
 10- ten attempted
 YY- Test 4 not taken (i.e., none attempted)
- 1.10.64-65 Test 1 through 4: Total number of questions attempted (i.e., total number of questions to which ego responded, whether his response was correct or incorrect.) 2 df
 04- four attempted
 05- five attempted
 :
 50- fifty attempted
 YY- no answer in either Test 1, Test 2, Test 3, or Test 4
- 1.10.66-68 Test 1 Ratio: number right divided by number attempted 3 df
 000-0.00
 000-0.01
 :
 100-1.00
 YYY- Test 1 not taken (i.e., none attempted)
- 1.10.69-71 Test 2 Ratio: number right divided by number attempted 3 df
 000-0.00
 000-0.01
 :
 100-1.00
 YYY-Test 2 not taken (i.e., none attempted)
- 1.10.72-74 Test 3 Ratio: number right divided by number attempted 3 df
 000-0.00
 001-0.01
 :
 100-1.00
 YYY- Test 3 not taken (i.e., none attempted)
- 1.10.75-77 Test 4 Ratio: number right divided by number attempted 3 df
 000-0.00
 001-0.01
 :
 100-1.00
 YYY- Test 4 not taken (i.e., none attempted)
- 1.10.78-80 Test 1 through 4 Ratio: number right divided by number attempted 3 df
 000-0.00
 001-0.01
 :
 100-1.00
 YYY- no answer in either Test 1, Test 2, Test 3, or Test 4

Card 1.11 Questionnaire- Occupational Plans of Michigan Youth

Column No.

1.11.1-2

Card identification 2 df

01- card 1.1

02- card 1.2

:

11- card 1.11

:

nn- card 1.nn

1.11.3-5

Person identification 3 df

1.11.6-7

Age in months to nearest month (OPMY Q13)

00- sixteen years, 11-12 months

01 seventeen years, 0 months

02- " " , 1 "

03 " " , 2 "

04 " " , 3 "

05 " " , 4 "

06 " " , 5 "

07 " " , 6 "

08 " " , 7 "

09 " " , 8 "

10 " " , 9 "

11 " " , 10 "

12 " " , 11 "

YY- no answer

1.11.8

Class in school (OPMY Q15)

0- seventh grade

1- eighth grade

2 ninth " (High school freshman)

3- tenth " (" " sophomore)

4- eleventh " (" " junior)

5- twelfth " (" " senior)

1.11.9

"I make my regular home with:" (OPMY Q16)

0- my own parents

1- a parent and a step-parent

2- one parent only

3- my grandparents

4- an uncle or aunt

5- other

Y- no answer

1.11.10

Church membership (OPMY Q17)

0- no

1- yes

Y- no answer

1.11.11

Church preference (OPMY Q17)

1- Roman Catholic

2- Anglo-Protestant High Prestige Churches

3- Episcopal

4- Presbyterian

5- Congregationalist

Y- no answer

- 3- Anglo-Protestant Low Prestige Churches
 Methodist
 Baptist
 Others
- 4- Protestant Sects
- 5- Continental Protestant
 Lutheran
 Evangelical
 Reformed
- 6- Jewish
- Y- No answer or no preference
- 1.11.12 Migration status (OPMY QI5 compared to OPMY QI9)
 0- migrant
 seniors attending same high school 1,2, or 3 years
 juniors attending same high school 1, or 2 years
 sophomores attending same high school 1 year
 1- non-migrant
 seniors attending same school four or more years
 juniors attending same school three or more years
 sophomores attending same school two or more years
 Y- no answer to Q5 or Q9, or insufficient information.
- 11.11.13-14 Number of extra-curricular activities 2 df (OPMY QI10)
 00- zero
 01- one
 :
 99- ninety nine
 YY- no answer but not "no extra-curricular activities"
- 1.11.15 Leadership activities self-estimated (OPMY QI11)
 0- less than average
 1- average
 2- greater than average
 Y- no answer
- 1.11.16 Place of residence (OPMY QI12)
 0- on a farm
 1- in the open country but not on a farm
 2- in a village under 2,500
 3- in a town of 2,500-10,000
 4- in a city over 10,000
 Y- no answer
- 1.11.17 Outside work (OPMY QI13)
 0- I do not work outside my family and home
 1- I sometimes work outside my family and home
 2- I have a fairly regular job outside my family and home
 Y - no answer
- 1.11.18 Number of adult male model-figures (OPMY QI14)
 0- zero
 1- one
 2- two
 3- three
 4- four
 5- five
 Y- no answer

- 1.11.19-20 Mean occupational prestige rating (North-Hatt) of adult male and model-figures personally known to ego (OPMY Q114) 2 df
34- thirty four points
35- thirty five points
:
96- ninety six points
YY- no adult
- 1.11.21-22 Proportion of Gemeinschaft-Gesellschaft reference groups - adult male model figure (OPMY Q114) 2 df (total gesellschaft figures divided by total figures)
00- 0.0: zero gesellschaft, all gemeinschaft responses
10- 1.0: all gesellschaft responses, zero gemeinschaft
YY- no relationship data.
- 1.11.23-24 Mean OAS score of best friends (OPMY Q115 friends OAS total scores) 2 df
00- zero points
01- one point
:
80- eighty points
YY- no best friends listed
- 1.11.25-26 Mean number of years of college planned by best friends (OPMY Q115, best friends Q113) 2 df
00- 0.0 years
01- 0.1 "
:
99- 9.9 "
YY- no answer
- 1.11.27 Number of best friends (OPMY Q115)
0- zero
1- one
:
5- five or more
Y- no answer, but not zero
- 1.11.28 Number of different occupational choices (OPMY Q111,2,11,12)
- 1.11.29-30 North-Hatt occupational choice prestige score; Highest choice (OPMY Q11 1,2,11,12) 2 df
34- thirty four
:
96- ninety six
YY- not answer
- 1.11.31-32 North-Hatt occupational choice prestige score: Lowest choice (OPMY Q11 1,2,11,12) 2 df
see 1.11.29-30
- 1.11.33-34 North-Hatt occupational choice prestige score: Final choice (OPMY Q11 2, or OPMY Q11 1) 2 df
If undecided between two or more choices in Q111, average the scores of the two being considered
see 1.11.29-30

- 1.11.35-36 North-Hatt occupational choice prestige score: Free choice
(OPMY QII11) 2 df
see 1.11.29-30
- 1.11.37-38 North-Hatt occupational choice prestige score: Mature choice
(OPMY Q II 12) 2 df
see 1.11.29-30
- 1.11.39-41 Mean occupational choice prestige level: average occupational
prestige scores for all different occupational choices among
OPMY Q II 1,2,11,12
340- thirty four point zero points
341- thirty four point one points
:
960- ninety six point zero points
YYY- no answer on 1.11.29-38
- 1.11.42 Type of final occupational choice (OPMY Q II2)
0- nonfarm
1- farm
Y- no answer
- 1.11.43 Degree of crystallization of final occupational choice (OPMY Q II
1, 2, 3)
0- completely uncrystallized: no final choice in (Q II 2) and
no alternatives implied for (Q II 2)
1- almost uncrystallized: one or more choices in or implied by
(Q II 2), and "I'm not sure my mind is made up" in (Q II3)
2- almost crystallized: "I'm not too sure, but I think my
mind is made up" in (Q II3)
3- completely crystallized: "I feel sure my mind is made up"
in (QII 3)
Y- no answer to (OPMY Q II 3) but clearly not identifiable as
"completely uncrystallized" (Q II, 2)
- 1.11.44 Amount of thought regarding occupational choice (OPMY Q II 4)
0- "little thought"
1- "some thought"
2- "great deal of thought"
Y - no answer or not applicable
- 1.11.45 Amount of knowledge regarding occupational choice (OPMY Q II 5)
0- low: Does not know much about it, but will find out in school
or job
1- medium: general knowledge, lacks details
2- high: H as good knowledge
Y- no answer or no occupational choice
- 1.11.46 Self estimate of ability for chosen occupation (OPMY Q II 6)
0- very much below average
1- somewhat below average
2- average
3- somewhat above average
4- very much above average
Y -no answer or not applicable

1.11.47

Self estimate of upward mobility potential (OPHY Q II 7)

- 0- very much below average
- 1- somewhat below average
- 2- average
- 3- somewhat above average
- 4- very much above average
- Y- no answer or not applicable

1.11.48

Index of self-confidence in occupational competition (OPHY Q II 6, 7) sum of scores for 1.11.46 and 1.11.47

- 0- zero points; low self-confidence
- 1- one point

8- eight points; high self-confidence;

- Y- no answer or not applicable on either or both 1.11.46 and 1.11.47

1.11.49

Amount of primary group support for choice of farming. Coded only for farm resident boys choosing farming. (OPHY Q I 12, II 2, 8, 9)

Scoring procedure

Q II 8. IN THE OCCUPATION I HAVE CHOSEN I CAN EXPECT HELP IN GETTING STARTED:

- A. (2) from my father or mother who is in this type of work.
- B. (1) from relatives who are in this type of work.
- C. (1) from friends who are in this type of work.
- D. (0) from no one.

- (Y) I don't know because I have not made my choice yet.
- (Y) no answer

Q II 9. AS TO FOLLOWING HIS OCCUPATION, (FOR BOYS ONLY) MY FATHER HAS:

- E. (2) tried to encourage me.
- F. (1) neither tried to encourage or discourage me.
- G. (0) tried to discourage me.
- (Y) no answer

Code:

- 0- zero points: (D + G)
- 1- one point: (B + G), (C + G), (D + F)
- 2- two points: (A + G), (B + C), (B + F), (C + F), (B + C + G), (D + E)
- 3- three points: (A + B), (A + C), (A + F), (A + B + G), (A + C + G), (B + E), (C + E), (B + C + F)
- 4- four points: (A + B + C), (A + E), (A + B + F), (A + C + F), (A + B + C + G), (B + C + E)
- 5- five points: (A + B + E), (A + C + E), (A + B + C + F)
- 6- six points: (A + B + C + E)
- Y- not a farm boy or not a farm chooser; no answer or not applicable in either or both Q II 8 or Q II 9.

1.11.50

Goal value transitivity (OPHY Q II 10)

- 0- not transitive
- 1- transitive
- Y- at least one question in Q II 10 unanswered

- 1.11.51 Importance of "money you can make" (OPMI Q II 10)
 0- zero points
 1- one point
 4- four points
 Y- at least one relevant subquestion unanswered
- 1.11.52 Importance of "difficulty in getting the required education" (OPMI Q II 10)
 see 1.11.51
- 1.11.53 Importance of "working hours" (OPMI Q II 10)
 see 1.11.51
- 1.11.54 Importance of "social standing" (OPMI Q II 10)
 see 1.11.51
- 1.11.55 Importance of "good you can do" (OPMI Q II 10)
 see 1.11.51
- 1.11.56 Level of college aspiration in years (OPMI Q II 13)
 0- zero
 1- two years or less
 2- three or four years
 3- five or six years
 4- seven or more years
 Y- no answer or insufficient evidence
- 1.11.57 Completeness of nuclear family (OPMI Q III 1)
 0- incomplete (due to death, divorce or separation)
 1- complete (both living together)
 Y- no answer
- 1.11.58 Father's occupation (OPMI Q III 3)
 0- not a farm operator
 1- part-time farm operator
 2- full time farm operator
 Y -no answer or not applicable
- 1.11.59-60 North-Hatt Occupational prestige status scores of father's lowest prestige occupation (OPMI Q III 3) 2 df
 see 1.11.29-30
- 1.11.61 Father's farm tenancy status! farm owners and part or full-time farm workers only (OPMI Q III 3)
 0- laborer
 1- renter
 2- owner
 Y- no answer or not applicable
- 1.11.62-64 Number of acres operated by father, farm operators only (OPMI Q III 3) 3 df
 000- zero acres
 001- one acre
 999- nine hundred ninety nine
 YYY- no answer or not applicable

1.11.65

Parental satisfaction with father's occupation (OPHY III Q 4,5)
(An index of parental status anxiety)

Scoring procedure:

Q III 4. MY FATHER CONSIDERS HIS OCCUPATION TO BE:

- (4) completely satisfactory
- (3) fairly satisfactory
- (2) good enough
- (1) not very good
- (0) very poor.

Q III 5. MY MOTHER CONSIDERS MY FATHER'S OCCUPATION TO BE:

- (4) completely satisfactory
- (3) fairly satisfactory
- (2) good enough
- (1) not very good
- (0) very poor.

Coding: Sum of points for Q III 4 and Q III 5.

0- zero points

1- one point

!

8- eight points

Y- no answer for one or more questions

1.11.66

Number of first and second generation progenitors born outside the United States (OPHY Q III 6-11) An index of non-American culture status of family. Coding count each "don't know" or blank as if born in the United States, unless, the Q III 6-11 was ignored.

0- none

1- one

!

6- six

Y- no answer to any one of Q III 6-11.

1.11.67

Mexican versus non-Mexican cultural origins (OPHY Q III 12, Q I 1, Q V 8)

0- non-Mexican

1- Mexican

Y- insufficient evidence

1.11.68-69

Parental educational status (OPHY Q III 12-13) 2 of

Scoring procedure:

12. MY FATHER'S EDUCATION CONSISTED OF:

- (0) less than 8 grades
- (4) 8 grades
- (6) 9-11 grades
- (8) 12 grades
- (10) some college
- (12) college degree

13. MY MOTHER'S EDUCATION CONSISTED OF:

- (0) less than 8 grades
- (4) 8 grades
- (6) 9-11 grades
- (8) 12 grades
- (10) some college
- (12) college degree

1.11.68-69 (continued)

Coding: Sum of points for Q III 12 and Q III 13.

00- zero points

04- four points

1

24- twenty four points

YY- no answer to either or both Q III 12 or Q III 13.

1.11.70

Father's educational status (OPMY Q III 12)

0- less than 8 grades

1- 8 grades

2- 9-11 grades

3- 12 grades

4- some college

5- college degree

Y- no answer

1.11.71

Mother's educational status (OPMY Q III 13)

see 1.11.70

1.11.72

Parental educational discrepancy (OPMY Q III 12-13)

Scoring procedure:

(1) define "low education" for either parent as 8 grades or less

(2) define "medium education" for either parent as 9 through 12 grades

(3) define "high education" for either parent as some college or college degree

Coding:

0- zero points: mother's education high, father's education low

1- one point: mother's education medium, father's education low; or mother's education high, father's education medium

2- two points: both parents low, both parents medium or both parents high

3- three points: father's education medium mother's education low; or father's education high, mother's education medium

4- four points: father's education high, mother's education low.

Y- no answer for either or both Q III 12 and Q III 13.

1.11.73

Paternal desire for ego's post high school educational mobility (OPMY Q IV 1)

0- zero points (low desire): "quit high school and go to work"

1- one point: "go to work after high school"

2- two points: "never said much about it"

3- three points: "some encouragement to continue"

4- four points: (high desire) "strongly encouraged me to continue"

Y- no answer

- 1.11.74 Maternal desire for ego's post high school educational mobility.
(OPHY Q IV 2)
See 1.11.73
- 1.11.75 Parental psychic support for post high school educational mobility.
(OPHY Q IV 1 Q IV 2) Sum of scores from 1.11.73 and 1.11.74.
0- zero points (low support)
1- one point
8- eight points (high support)
Y- no answer for either or both Q IV 1 or Q IV 2.
- 1.11.76 Parents financial ability to assist ego in achieving mobility after high school (OPHY Q IV 3)
0- "able to give no help"
1- "able to give some help"
2- "able to give considerable help"
Y- no answer
- 1.11.77 Parents willingness to assist ego in achieving mobility after high school. (OPHY Q IV 4)
0- "willing to give no help"
1- "willing to give some help"
2- "willing to give a great deal of help"
Y- no answer
- 1.11.78 Parents' propensity to assist ego in achieving mobility after high school (OPHY Q IV 3 and Q IV 4). (Means or "ability" times motivation or "willingness"). Scoring procedure: score 1.11.76 multiplied by score 1.11.77.
0- zero points
1- one point
2- two points
(3)- not possible
4- four points
Y- no answer to either or both 1.11.75 or 1.11.76.
- 1.11.79-80 Mean North-Hatt occupational prestige of best friends' fathers (ego's OPHY Q I 15, best friends' OPHY Q III 3 lowest occupation of father)
34- thirty-four points
96- ninety-six points
Y- no answer to ego's OPHY Q I 15 or best friends' OPHY Q III 3.

Card 1.12: Questionnaire--Occupational Plans of Michigan Youth (continued from card 1.11)

Column No.
1.12.1-7

Card identification 2 df.

01- card 1.1

02- card 1.2

1

12- card 1.12 (This card is punched 12)

1.12.3-5 Person identification 3 df

1.12.6 Paternal desire for ego's high occupational achievement (OPHY Q IV 5)

0- zero points (low desire): "Does not care how good the job I go into is."

1- one point: "Feels that the job I take should be as good as most jobs around here."

2- two points: "Wants me to have a job that is of little better than most jobs around here."

3- three points: "Wants me to have a job that is quite a bit better than most jobs around here."

4- four points: "Wants me to have a very important job."

Y- no answer.

1.12.7 Maternal desire for ego's high occupational achievement (OPHY Q IV 6)
See 1.12.6

1.12.8 Parental psychic support for ego's high occupational achievement (OPHY Q IV 5 and Q IV 6) Sum of scores from 1.12.6 and 1.12.7.

0- zero points (low support)

1- one point

1

8- eight points (high support)

Y- no answer for either or both Q IV 5 and Q IV 6).

1.12.9-10 Parental desire for ego's high social status. (OPHY Q IV 1, Q IV 2, Q IV 5, Q IV 6) Sum of 1.11.75 and 1.12.8. 2 df

00- zero points (low desire)

01- one point

1

16- sixteen points (high desire)

Y- no answer to anyone or more of Q IV 1, Q IV 2, Q IV 5, or Q IV 6.

1.12.11 Status anxiety (SA): Ego's satisfaction with father's education. (OPHY Q III 14)

0- low SA- "good enough" or "satisfactory"

1- high SA- "not very good" or "very poor"

Y- no answer

1.12.12 Status anxiety (SA): Ego's estimate of family's relative income. (OPHY Q III 16)

0- low SA- "just average" or "high"

1- high SA- "less than average" or "low"

Y- no answer

- 1.12.13 Status anxiety (SA): Ego's estimate of community importance evaluation of parents (OPHY Q III 17)
 0- low SA- "average" or "important"
 1- high SA- "less than average" or "not at all important"
 Y- no answer
- 1.12.14 Status anxiety (SA): "My family is too poor to buy me the kind of things I need." (OPHY Q IV 7)
 0- low SA- No
 1- high SA- Yes
 Y- no answer
- 1.12.15 Status anxiety (SA): "The girls I would like to date prefer to go out with boys whose families are more important than mine." (OPHY Q IV 8)
 0- low SA- No
 1- high SA- Yes
 Y- no answer
- 1.12.16 Status anxiety (SA): "I often wish my father (or mother or guardian) had a better job." (OPHY Q IV 9)
 0- low SA- No
 1- high SA- Yes
 Y- no answer
- 1.12.17 Status anxiety (SA): "I often wish my father was a more important man in the community than he is." (OPHY Q IV 10)
 0- low SA- No
 1- high SA- Yes
 Y- no answer
- 1.12.18 Status anxiety (SA): "Do people seem to think well of your family's social standing?" California Test of Personality, Secondary Form AA, 1953 revision, E. W. Tiegs, W. W. Clark, and L. P. Thorpe; Question 23: (CTP Q 23)
 0- low SA- Yes
 1- high SA- No
 Y- no answer
- 1.12.19 Status anxiety (SA): "Do you feel that people recognize your social standing as they should?" (CTP Q 28)
 0- low SA- Yes
 1- high SA- No
 Y- no answer
- 1.12.20 Status anxiety (SA): "Do you feel that your relatives are as attractive and successful as those of your friends." (CTP Q 48)
 0- low SA- Yes
 1- high SA- No
 Y- no answer
- 1.12.21 Status anxiety (SA): "Are things difficult for you because your folks are usually short of money?" (CTP Q 140)
 0- low SA - No
 1- high SA - Yes
 Y- no answer

- 1.12.22 Status anxiety (SA): "Do you avoid inviting others to your home because it is not as nice as theirs?" (CTP Q 147)
 0- low SA- No
 1- high SA- Yes
 Y- no answer
- 1.12.23 Status anxiety (SA): "For the most part, are your neighbors the kind of people you like?" (CTP Q 178)
 0- low SA- Yes
 1- high SA- No
 Y- no answer
- 1.12.24-25 Index of Status anxiety (SA). Sum of all SA responses, 1.12.11 to 1.12.23 2 df
 00- zero points - low SA
 01- one point
 :
 13- thirteen--high SA
 YY- no answer to any or all of 1.12.11 to 1.12.23
- 1.12.26-27 Number of siblings in ego's family, including ego (OPMY Q V 1, 2, 3, 4)
 01- ego only
 02- two
 :
 nn- the largest family
 YY- no information but ego is not an only child
- 1.12.28-29 Ego's ordinal position in the sib group (OPMY Q V 1, 2, 3, 4) 2 df
 01- eldest (or only)
 02- second eldest
 :
 nn- youngest in the largest family
 YY- no information, but ego is not an only child.
- 1.12.30 Summary variable of ego's sib group structural position (OPMY Q V 1, 2, 3, 4)
 0- ego is an only child
 1- ego is a member of a small family: sib group size is three or less.
 2- ego is the eldest child in a large family (sib group size is four or more)
 3- ego is the second child in a large family (sib group size is four or more)
 4- ego is the youngest child in a large family (sib group size is four or more)
 5- ego is a middle child (i.e., neither eldest, second eldest, nor youngest) in a large family (sib group size is four or more).
 Y- no information, but ego is not an only child.

- 1.12.31 Number of siblings quitting high school before graduation (OPMY Q V 6)
 0- zero
 1- one
 :
 9- nine or more
 Y- no answer or no siblings
- 1.12.32 Number of siblings attending college (OPMY Q V 7)
 0- zero
 1- one
 :
 9- nine or more
 Y- no answer or no siblings
- 1.12.33 Parental concern (OPMY Q V 9)
 COMPARED TO MOST OF MY BROTHERS AND SISTERS, I BELIEVE MY FATHER WAS:
 (4) much more interested in what I did.
 (3) a little more interested in what I did.
 (2) just about equally interested in what each of us did.
 (1) a little less interested in what I did.
 (0) much less interested in what I did.
 (Y) no answer (include only children)
- 1.12.34 Parental concern (OPMY Q V 10)
 COMPARED TO MOST OF MY BROTHERS, I BELIEVE MY MOTHER WAS:
 (4) much more interested in what I did.
 (3) a little more interested in what I did.
 (2) just about equally interested in what each of us did.
 (1) a little less interested in what I did.
 (0) much less interested in what I did.
 (Y) no answer (include only children)
- 1.12.35 Parental concern (OPMY Q V 11)
 COMPARED TO MOST OF MY BROTHERS AND SISTERS, I BELIEVE MY FATHER WAS:
 (4) much kinder to me.
 (3) a little kinder to me.
 (2) about equally kind to each of us.
 (1) a little less kind to me.
 (0) much less kind to me.
 (Y) no answer (include only children)
- 1.12.36 Parental concern (OPMY Q V 12)
 COMPARED TO MOST OF MY BROTHERS AND SISTERS, I BELIEVE MY MOTHER WAS:
 (4) much kinder to me.
 (3) a little kinder to me.
 (2) about equally kind to each of us.
 (1) a little less kind to me.
 (0) much less kind to me.
 (Y) no answer (include only children)
- 1.12.37 Parental concern (OPMY Q V 13)
 COMPARED TO MOST OF MY BROTHERS AND SISTERS, I BELIEVE MY FATHER WAS:
 (4) much more attentive to me.
 (3) a little more attentive to me.
 (2) about equally attentive to each of us.
 (1) a little less attentive to me.
 (0) much less attentive to me.
 (Y) no answer (include only children)

- 1.12.38 Parental concern (OPMY Q V 14)
 COMPARED TO MOST OF MY BROTHERS AND SISTERS, I BELIEVE MY MOTHER WAS:
 (4) much more attentive to me.
 (3) a little more attentive to me.
 (2) about equally attentive to each of us.
 (1) a little less attentive to me.
 (0) much less attentive to me.
 (Y) no answer (include only children)
- 1.12.39-40 Index of Parental Concern (PC) (OPMY Q V 9-14) 2 df.
 00- zero points (low PC)
 01- one point
 :
 24- twenty-four points (high PC)
 YY- no answer to any or all of OPMY Q V 9-14 (include only children)
- 1.12.41 Inter-sib concern (SC) (OPMY Q V 15)
 USUALLY I WAS:
 (4) much more interested in most of my brothers and sisters than they were in me.
 (3) a little more interested in most of my brothers and sisters than they were in me.
 (2) about as interested in my brothers and sisters as they were in me.
 (1) a little less interested in most of my brothers and sisters than they were in me.
 (0) much less interested in most of my brothers and sisters than they were in me.
 (Y) no answer (include only children)
- 1.12.42 Modified Sewell socio-economic status scale- short form (SES):
 House ownership (OPMY Q VI 1)
 3- rented
 6- owned
 Y- no answer (but not no)
- 1.12.43 Modified Sewell socio-economic status scale- short form (SES):
 House construction (OPMY Q VI 4)
 3- unpainted frame, artificial brick, trailer house
 5- brick, stucco, painted frame, block (concrete or cinder), aluminum siding, shingle; combinations of these
 Y- no answer (but not no)
- 1.12.44 Modified Sewell socio-economic status scale- short form (SES):
 Room-person ratio (OPMY Q VI 2, Q VI 3)
 3- below 1.00
 5- 1.00 - 1.99
 7- 2.00 and up
 Y- no answer
- 1.12.45 Modified Sewell socio-economic status scale- short form (SES):
 lighting facilities (OPMY Q VI 5)
 3- oil lamps, types not mentioned under 6 or 8, none
 6- gas, mantle or pressure.
 8- electric
 Y- no answer (but not no)

- 1.12.46 Modified Sewell socio-economic status scale- short form (SES):
running water facilities (OPMY Q VI 8)
 4- no
 8- yes
 Y- no answer (but not no)
- 1.12.47 Modified Sewell socio-economic status scale-short form (SES):
power washing facility (OPMY Q VI 10)
 3- no
 6- yes
 Y- no answer (but not no)
- 1.12.48 Modified Sewell socio-economic status scale- short form (SES):
refrigeration facilities (OPMY Q VI 6, Q VI 7)
 3- none, or types not specified under 6 or 8.
 6- ice
 8- mechanical, including deep freeze
 Y- no answer (but not no)
- 1.12.49 Modified Sewell socio-economic status scale- short form (SES):
communication facilities- radio (OPMY Q VI 11)
 3- no
 6- yes
 Y- no answer (but not no)
- 1.12.50 Modified Sewell socio-economic status scale-short form (SES):
communication facilities- telephone (OPMY Q VI 13)
 3- no
 6- yes
 Y- no answer (but not no)
- 1.12.51 Modified Sewell socio-economic scale- short form (SES):
communication facilities- automobile (OPMY Q VI 12)
 2- no
 5- yes
 Y- no answer (but not no)
- 1.12.52 Modified Sewell socio-economic scale- short form (SES):
communication facilities- daily newspaper (OPMY Q VI 9)
 3- no
 6- yes
 Y- no answer (but not no)
- 1.12.53 Modified Sewell socio-economic scale- short form (SES):
education- father (OPMY Q III 12)
 2- 0-7 years of school completed
 4- 8 " " " "
 6- 9-11 " " " "
 7- 12 " " " "
 9- College degree - This is not part of the Sewell scale.
 Y- no answer

- 1.12.54 Modified Sewell socio-economic status scale- short form (SES):
education - mother (OPMY Q III 13)
 2- 0-7 years of school completed
 4- 8 " " " "
 6- 9-11 " " " "
 7- 12 " " " "
 8- 13 " " " "
 9- College degree. This is not part of the Sewell scale
 Y- No answer
- 1.12.55 Modified Sewell socio-economic status scale- short form (SES):
church attendance- father (OPMY Q VI 14)
 2- father does not attend church at least once a month
 5- father attends church at least once a month
 Y- no answer (but not no)
- 1.12.56 Modified Sewell socio-economic status scale- short form (SES):
church attendance- mother (OPMY Q VI 15)
 2- mother does not attend church at least once a month
 5- mother attends church at least once a month
 Y- no answer (but not no)
- 1.12.57-58 Modified Sewell socio-economic status scale- short form (SES):
Total Score 2 df
 00- zero points (low SES)
 01- one point
 :
 99- ninety-nine points (high SES)
 YY- no answer to any of 1.12.42 through 1.12.56
- 1.12.59-60 Modified Sewell socio-economic status scale- short form (SES):
Total score for home quality, home facilities and communication facilities. (OPMY Q VI 1 through 13) 2 df
 00- zero points (low SES)
 01- one point
 :
 99- ninety-nine points (high SES)
 YY- no answer to any of 1.12.42 -1.12.52
- 1.12.61-62 Modified Sewell socio-economic status scale- short form (SES):
Total score for home quality (Sum of scores for 1.12.42, 1.12.43, 1.12.44) 2 df
 09- nine points
 10- ten points
 :
 18- eighteen points
 YY- no answer to OPMY Q VI 1, 2, 3, or 4.
- 1.12.63-64 Modified Sewell socio-economic status scale- short form (SES):
Total score for home facilities (Sum of scores for 1.12.45, 1.12.46, 1.12.47, 1.12.48)
 13- thirteen points
 :
 30- thirty points
 YY- no answer to OPMY Q VI 5, 6, 7, 8 or 10

- 1.12.65-66 Modified Sewell socio-economic status scale - short form (SES):
Total score for communication facilities (Su. of scores for 1.12.49,
1.12.50, 1.12.51, 1.12.52)
11 - 11 points
:
23 - twenty-three points
YY - no answer to OPMY O VI 9, 11, 12, 13
- 1.12.67-68 Composite Index of Social Status (CISS). Based upon parental education,
home equality, home facilities, communication facilities, and parental
occupational prestige.
- 1.12.69-71 Grade point average for years 1956-1957 - 3df
Scoring procedure:
(1) Only grades for academic and vocational semester-courses* are
counted, physical education, etc. is not counted.
(2) Four points are given for each A.
Three " " " " " B.
Two " " " " " C.
One " " " " " D.
Zero " " " " " E.
(3) The total number of points for 1956-1957 computed.
(4) G. P. A. equals total points (from 3) divided by total academic
and vocational courses taken during 1956-1957.

000 - G. P. A. equals 0.00
001 - " " " equals 0.001
:
400 - G. P. A. equals 4.00
YYY - no data
- 1.12.72 Number of agricultural semester courses* taken in high school through
Spring, 1957.
0 - none
1 - one
:
9 - nine
y - no data
- 1.12.73-75 Grade point average for all agricultural semester-courses* taken
through 1956-57 - 3df.
Scoring procedure: Same as 1.12.69-71, except that only agricultural
courses (see 1.12.72) are counted.
000 - Agricultural G. P. A. equals 0.00
001 - " " " 0.01
:
400 - " " " 4.00
xyy - insufficient data
yyy - no agricultural courses taken
- 1.12.76 Number of siblings graduating from high school (OPMY Q V 5)
0 - none
1 - one

*One semester course equals 1/2 a unit.

1.12.76 (cont.)

9- nine or more
Y- no answer or no sibling

1.12.77-80

School record data

* A semester - course equals 1/2 a unit.

1.13.8 Item 1, Q6 0 - Yes
1 - No
2 - Contingent (depends on ...)
3 - No answer

1.13.9 Item 1, Q3 date 1.13.8

1.13.10 Item 1, Q6 date

1.13.11 Item 1, Q6 date

1.13.12 Item 1, Q6 0 - Yes
1 - No
2 - Contingent (depends on ...)
3 - No answer

1.13.13-15 Categories of specific remarks to Q6 (2 of 2)

01 Experience oriented	Instrumental (Task-oriented)
02 Formal education	
03 Instrumental non-farm type work	
04 Both experience and education	
11 Experience	Very likely Instrumental
12 Formal education	
13 Non-farm type work	
14 Experience and education	
21 Experience	Clearly expressive (Self fulfillment oriented)
22 Formal education	
23 Non-farm type work	
24 Experience and education	
99 No remark	

Card 1.13

Questionnaire: Farm boys - Opinions on required education for planning to farm V.S. not planning to farm

Column No.

1.13.1-2	Card identification (2 df)	
1.13.3-5	Person identification (3 df)	
1.13.6	0 - non-farm boy 1 - farm boy	
1.13.7	Item 1 (Plans to be a farmer), Question 1 (I1, Q1)	
	0 - Yes	
	1 - No	
	2 - Contingent (depends on)	
	Y - No answer	
1.13.8	Item 1, Q2	0 - Yes 1 - No 2 - Contingent (depends on) Y - No answer
1.13.9	Item 1, Q3	ditto 1.13.8
1.13.10	Item 1, Q4	ditto
1.13.11	Item 1, Q5	ditto
1.13.12	Item 1, Q6	0 - Yes 1 - No 2 - Contingent (depends on) Y - No answer
1.13.13-14	Categories of specific remarks to Q6 (2 df)	
	01 Experience oriented	Instrumental (Task-oriented)
	02 Formal education	
	03 Instrumental non-farm type work	
	04 Both experience and education	
	11 Experience	Very likely instrumental
	12 Formal education	
	13 Non-farm type work	
	14 Experience and education	
	21 Experience	Clearly expressive (Self fulfillment oriented)
	22 Formal education	
	YY No remark	

- 1.13.15 Item 2 (Plans not to be a farmer)
Question 1 (I2, Q1)
0 - Yes
1 - No
2 - Contingent (depends on.....)
Y - No answer
- 1.13.16 Item 2, Q2 0 - Yes
1 - No
2 - Contingent (depends on.....)
Y - No answer
- 1.13.17 Item 2, Q3 ditto 1.13.16
- 1.13.18 Item 2, Q4 ditto
- 1.13.19 Item 2, Q5 ditto
- 1.13.20-21 Categories of specific remarks to Q5 (2 df)
- | | | |
|----------------------------------|---|---|
| Q1 Experience oriented | } | Instrumental
(Task-oriented) |
| Q2 Formal education | | |
| Q4 Both experience and education | | |
| 11 Experience | } | Very likely
instrumental |
| 12 Formal education | | |
| 14 Both experience and education | | |
| 21 Experience | } | Clearly expressive
(Self fulfillment oriented) |
| 22 Formal education | | |
| YI No remark | | |
- 1.13.22 Comparison of ideas on educational requirements:
Planning to farm vs planning not to farm
Planning to farm-----
0 - More
1 - Same
2 - Less
Than not planning to farm
- 1.13.23 Highest indicated schooling for those planning to farm
- 0 - does not need to go to high school
1 - needs to go to high school
2 - needs to graduate from high school
3 - needs an agricultural short course
4 - needs 1 or 2 years of college
5 - needs to graduate from college
6 - needs some special training beyond college

1.13.24

Highest indicated schooling for those not planning to farm:

- 0 - does not need to go to high school
- 1 - needs to go to high school
- 2 - needs to graduate from high school
- 3 - needs 1 or 2 years of college
- 4 - needs to graduate from college
- 5 - needs some special training beyond college

1.14.1-5

Range identification (1 of)

1.14.6

Business: business education

- 0 - not a farm operator
- 1 - part-time farm operator
- 2 - full-time farm operator
- 3 - no record of any experience

1.14.7

Occupational education: farm education

- 0 - no record
- 1 - farm
- 2 - no record

1.14.8-9

Range, soil vegetation: (2 of)

- 0 - no record
- 1 - no record
- 2 - no record
- 3 - no record

1.14.10-11

College education level: (2 of)

- 0 - no record
- 1 - no record
- 2 - no record

1.14.12-13

U. S. 7-Season: (2 of)

- 0 - no record
- 1 - no record
- 2 - no record

1.14.14-15

16 SF Year 7-Season: (2 of)

- 0 - no record
- 1 - no record
- 2 - no record

1.14.16-17

16 SF, Year 7-Season: (2 of)

- 0 - no record
- 1 - no record
- 2 - no record

* These persons or their data were either denied or incomplete to the extent that they could not be utilized were not included in this book. Hence, there are 433 cards in this book, some of which have Y or I markers with the exception of 1.14.15-17.

Card 1.14

Normalized Data in the form of T-Scores. (Includes estimates made for incomplete data)*

Column No.

- 1.14.1-2 Card identification (2 df)
 01 - Card 1.1
 02 - Card 1.2
 1
 14 - Card 1.14 (This card is punched 14)
- 1.14.3-5 Person identification (3 df)
- 1.14.6 Residence: father's occupation.
 0 - not a farm operator
 1 - part-time farm operator
 2 - full-time farm operator
 Y - no answer or not applicable
- 1.14.7 Occupational choices: Farm vs. nonfarm
 0 - nonfarm
 1 - farm
 Y - no answer
- 1.14.8-9 Occupational aspiration T-Score. (2 df)
 20- twenty points
 21- twenty-one points
 1
 80- eighty points
- 1.14.10-11 College aspiration level T-Scores. (2 df)
 Computed from 1.11.56
 See 1.14.8-9
- 1.14.12-13 I. Q. T-Scores. (2 df)
 Computed from 1.1.68-69
 See 1.14.8-9
- 1.14.14-15 16 PF Test T-Scores: Factor "A". (2 df)
 Computed from 1.5.43-44 See 1.14.8-9
- 1.14.16-17 16 PF, Factor "B" T-Scores. (2 df)
 Computed from 1.5.45-46 See 1.14.8-9

* Nine persons on whom data were either invalid or incomplete to the extent that they could not be estimated were not included in this deck. Hence, there are 433 cards in this deck, none of which have Y or X punches with the exception of 1.14.78-79.

Column No.	
1.14.18-19	16 PF, Factor "C" T-Scores. (2 df) Computed from 1.5.47-48 See 1.14.8-9
1.14.20-21	16 PF, Factor "E" T-Scores. (2 df) Computed from 1.5.49-50 See 1.14.8-9
1.14.22-23	16 PF, Factor "F" T-Scores. (2 df) Computed from 1.5.51-52 See 1.14.8-9
1.14.24-25	16 PF, Factor "G" T-Scores. (2 df) Computed from 1.5.53-54 See 1.14.8-9
1.14.26-27	16 PF, Factor "H" T-Scores. (2 df) Computed from 1.5.55-56 See 1.14.8-9
1.14.28-29	16 PF, Factor "I" T-Scores. (2 df) Computed from 1.5.57-58 See 1.14.8-9
1.14.30-31	16 PF, Factor "L" T-Scores. (2 df) Computed from 1.5.59-60 See 1.14.8-9
1.14.32-33	16 PF, Factor "M" T-Scores. (2 df) Computed from 1.5.61-62 See 1.14.8-9
1.14.34-35	16 PF, Factor "N" T-Scores. (2 df) Computed from 1.5.63-64 See 1.14.8-9
1.14.36-37	16 PF, Factor "O" T-Scores. (2 df) Computed from 1.5.65-66 See 1.14.8-9
1.14.38-39	16 PF, Factor "Q ₁ " T-Scores. (2 df) Computed from 1.5.67-68 See 1.14.8-9
1.14.40-41	16 PF, Factor "Q ₂ " T-Scores. (2 df) Computed from 1.5.69-70 See 1.14.8-9
1.14.42-43	16 PF, Factor "Q ₃ " T-Scores. (2 df) Computed from 1.5.71-72 See 1.14.8-9
1.14.44-45	16 PF, Factor "Q ₄ " T-Scores. (2 df) Computed from 1.5.73-74 See 1.14.8-9
1.14.46-47	California Test of Personality, Total Adjustment T-Score. (2 df) Computed from 1.9.64-66 See 1.14.8-9
1.14.48-49	BVA 1 T-Score. (2 df) Computed from 1.6.50 See 1.14.8-9
1.14.50-51	BVA 2 T-Score. (2 df) Computed from 1.6.51 See 1.14.8-9

Column No.

1.14.52-53	BVA 3 T-Score. (2 df) Computed from 1.6.52 See 1.14.8-9
1.14.54-55	BVA 4 T-Score. (2 df) Computed from 1.6.53 See 1.14.8-9
1.14.56-57	BVA 5 T-Score. (2 df) Computed from 1.6.54 See 1.14.8-9
1.14.58-59	BVA 6 T-Score. (2 df) Computed from 1.6.55 See 1.14.8-9
1.14.60-61	Occupational crystallization T-Scores. (2 df) Computed from 1.11.43 See 1.14.8-9
1.14.62-63	Father's educational status T-Scores. (2 df) Computed from 1.11.70 See 1.14.8-9
1.14.64-65	T-Scores: Parental desire for ego's post-high school education. (2 df) Computed from 1.11.75 See 1.14.8-9
1.14.66-67	T-Scores: Parental desire for ego's high occupational achievement. (2 df) Computed from 1.12.8 See 1.14.8-9
1.14.68-69	T-Scores: Parental desire for ego's high social status. (2 df) Computed from 1.12.9-10 See 1.14.8-9
1.14.70-71	Status Anxiety T-Scores. (2 df) Computed from 1.12.24-25 See 1.14.8-9
1.14.72-73	Sewell SES T-Scores. (2 df) Computed from 1.12.57-58 See 1.14.8-9
1.14.74-75	GPA 1956-1957: T-Scores. (2 df) Computed from 1.12.69-71 See 1.14.8-9
1.14.76-77	Number of agricultural semester courses through 1957: T-Scores. (2 df) Computed from 1.12.72 46- no agricultural courses taken 56- one agricultural course taken : 76- nine agricultural courses taken
1.14.78-79	Agricultural GPA through 1957: T-Scores. (2 df) Computed from 1.12.73-75 20- twenty points 21- twenty-one points : 80- eighty points YY- no agricultural courses taken

Card 1.15 Additional normalized data in the form of T-scores.

Column No.

- 1.15.1-2 Card identification (2df)
- 01 - Card 1.1
02 - Card 1.2
:
15 - Card 1.15 (This card is punched 15)
- 1.15.3-5 Person identification (3df)
- 1.15.6 Residence: father's occupation. Based on 1.11.58
- 0 - not a farm operator
1 - part-time farm operator
2 - full-time farm operator
y - no answer or not applicable
- 1.15.7 Occupational choices: Farm vs. nonfarm
Based on 1.11.42
- 0 - nonfarm
1 - farm
y - no answer
- 1.15.8-9 T-scores: Number of different occupational choices.
(OPMY Q II, 1, 2, 11, 12) (2df) Computed from 1.11.28
- 20 - twenty points
21 - twenty-one points
:
80 - eighty points
yy - no answer
- 1.15.10-11 T-scores: North-Hatt occupational choice prestige score:
Highest choice (OPMY Q II, 1, 2, 11, 12) (2df)
Computed from 1.11.29-30 See 1.15.8-9
- 1.15.12-13 T-scores: North-Hatt occupational choice prestige score:
Lowest choice (OPMY Q II, 1, 2, 11, 12) (2df)
Computed from 1.11.31-32 See 1.15.8-9
- 1.15.14-15 T-scores: North-Hatt occupational choice prestige score:
Final choice (OPMY Q II, 2 or 1) (2df)
Computed from 1.11.33-34 See 1.15.8-9

Column No.

MAYNOR HIGH SCHOOL NOTES, 1958, 1959 TO FEB. 1959

- 1.15.16-17 T-scores: North-Hatt occupational choice prestige score:
Free choice (OPMY Q II, 11) (2df)
Computed from 1.11.35-36 See 1.15.8-9
- 1.15.18-19 T-scores: North-Hatt occupational choice prestige score:
Mature choice (OPMY Q II, 12) (2df)
Computed from 1.11.37-38 See 1.15.8-9
- 1.15.20-21 T-scores: Mean occupational choice prestige level: average
occupational prestige scores for all different occupational
choices among OPMY Q II, 1, 2, 11, 12 (2df)
Computed from 1.11.39-41 See 1.15.8-9

MAYNOR, 1958, QUESTIONNAIRE DATA

- 1.16.6-7 Age to nearest birthday (2df) (Question 2)
16 - sixteen years
17 - seventeen years
18 - eighteen years
Y - no answer
- 1.16.8 Grade in school (Question 4)
0 - Junior (11th grade)
1 - Senior (12th grade)
Y - no answer
- 1.16.9 Father's occupation: Farm vs. nonfarm (Question 5)
0 - not a farm operator
1 - is a farm operator
Y - no answer
- 1.16.10-11 North-Hatt Occupational Prestige score of father's occupation
(Question 5), (2df)
34 - thirty-four
96 - ninety-six
Y - no answer
- 1.16.12 Number of best friends mentioned (Question 6)
0 - none
1 - one
5 - five
6 - six or more
Y - no answer

MASON HIGH SCHOOL BOYS, DEC. '58 to FEB. '59CARD 1.16

Mason Questionnaire and OAS Data, 1st and 2nd testings.

COLUMN NO.

1.16.1-2

Card Identification (2df)

01 - Card 1.1

02 - Card 1.2

:

16 - This card is punched 16

1.16.3-5

Person identification (3df)

DECEMBER, 1958, QUESTIONNAIRE DATA

1.16.6-7

Age to nearest birthday (2df) (Question 2)

16 - sixteen years

:

18 - eighteen years

YY - no answer

1.16.8

Grade in school (Question 4)

0 - junior (11th grade)

1 - senior (12th grade)

Y - no answer

1.16.9

Father's occupation: farm vs. nonfarm (Question 5)

0 - not a farm operator

2 - as a farm operator

Y - no answer

1.16.10-11

North-Hatt Occupational Prestige score of father's occupation
(Question 5), (2df)

34 - thirty-four

:

96 - ninety-six

YY - no answer

1.16.12

Number of best friends mentioned (Question 6)

0 - none

1 - one

:

5 - five

6 - six or more

Y - no answer

- 1.16.13 Number of best friends mentioned & who also choose respondent (Question 6) (e.g., mutual choices within the sample)
 0 - none
 1 - one
 :
 5 - five or more
 Y - no answer
- 1.16.14-15 Chain group¹ identification number (group to which the respondent belongs) (2df)
 01 - chain group one
 02 - chain group two
 :
 nn - chain group nn
 yy - does not belong to any chain group in sample
- 1.16.16-17 Peer group²_A identification number
 01 - peer group one
 02 - peer group two
 :
 nn - peer group nn
 yy - does not belong to any peer group in sample
- 1.16.18-19 Peer group_B identification number
 01 - peer group one
 02 - peer group two
 :
 nn - peer group nn
 yy - does not belong to any peer group in sample
- 1.16.20-21 Peer group_C IDENTIFICATION NUMBER
 01 - peer group one
 02 - peer group two
 :
 nn - peer group nn
 yy - does not belong to any peer group in sample
- 1.16.22-23 Peer group_D identification number
 01 - peer group one
 02 - peer group two
 :
 nn - peer group nn
 yy - does not belong to any peer group in sample

¹ Defined as a linked chain of individuals

² Individuals who choose and are chosen by each other as best friends.
 (Two or more)

OAS-R Scores: First testing, 12-58

1.16.24	Question One score (1st score R-ES) 0 - zero points 1 - one point : 9 - nine points Y - no answer
1.16.25	Question Two scores (1st score I-ES) See 1.16.36
1.16.26	Question Three score (2nd score R-ES) See 1.16.36
1.16.27	Question Four score (2nd score I-ES) See 1.16.36
1.16.28	Question Five score (1st score R-30) See 1.16.36
1.16.29	Question Six Score (1st score I-30) See 1.16.36
1.16.30	Question Seven score (2nd score R-30) See 1.16.36
1.16.31	Question Eight score (2nd score I-30) See 1.16.36
1.16.32-33	Sum of scores for Q 1 & 3: R-ES (2df) 00 - zero points 01 - one point : 18 - eighteen points YY - no answer to one or both of Q 1 & 3
1.16.34-35	Sum of scores for Q 2 & 4: I-ES (2df) See 1.16.44-45
1.16.36-37	Sum of scores for Q 5 & 7: R-30 (2df) See 1.16.44-45
1.16.38-39	Sum of scores for Q 6 & 8: I-30 (2df) See 1.16.44-45
1.16.40-41	Sum of scores for Q 1,3,5,7,: realistic choice level (2df) 00 - zero points 01 - one point : 36 - thirty-six points YY - no answer to any or all of Q 1,3,5,7

- 1.16.42-43 Sum of scores for Q 2,4,6,8: idealistic choice level (2df)
See 1.16.52-53
- 1.16.44-45 Sum of scores for Q 1,2,5,6: Split-half A₁
00 - zero points
01 - one point
:
36 - thirty-six points
YY - no answer to one or all of summed questions
- 1.16.46-47 Sum of scores for Q 3,4,7,8: Split-half B₁
See 1.16.44-45
- 1.16.48-49 Sum of scores for Q 1 through 8: level of occupational aspiration .
(2df)
00 - zero points
01 - one point
:
72 - seventy-two points
YY - no answer to any one or all of Q 1 through 8

OAS-R Scores (Form B) and v Achievement Scores
Second testing, 2-59

- 1.16.50 Question One score
See 1.16.36
- 1.16.51 Question Two score
See 1.16.37
- 1.16.52 Question Three score
See 1.16.38
- 1.16.53 Question Four score
See 1.16.39
- 1.16.54 Question Five score
See 1.16.40
- 1.16.55 Question Six score
See 1.16.41
- 1.16.56 Question Seven score
See 1.16.42
- 1.16.57 Question Eight score
See 1.16.43

- 1.16.58-59 Sum of Q 1 & 3: R-ES (2df)
See 1.16.44-45
- 1.16.60-61 Sum of Q 2 & 4: I-ES (2df)
See 1.16.46-47
- 1.16.62-63 Sum of Q 5 & 7: R-30 (2df)
See 1.16.48-49
- 1.16.64-65 Sum of Q 6 & 8: I-30 (2df)
See 1.16.50-51
- 1.16.66-67 Sum of Q 1,3,5,7: realistic choice level (2df)
See 1.16.52-53
- 1.16.68-69 Sum of Q 2,4,6,8: idealistic choice level (2df)
See 1.16.54-55
- 1.16.70-71 Sum of scores for Q 1,2,5,6: Split-half A₂
See 1.16.44-45
- 1.16.72-73 Sum of scores for Q 3,4,7,8 Split-half B₂
See 1.16.44-45
- 1.16.74-75 Sum of scores for Q 1 through 8: level of occupational aspiration (2df)
See 1.16.56-57
- 1.16.76-77 y Achievement scores (2df)
00 - zero points (low y Achievement)
01 - one point
02 - two points
:
36 - thirty-six points (high y Achievement)
- 1.16.78-80 Grade Point Average for school year 1958-1959
000 - zero points
:
100 - 1.00 (D average)
:
200 - 2.00 (C Average)
:
300 - 3.00 (B Average)
:
400 - 4.00 (A Average)
YYY - no data on grade point average

Card 1.51

Work Deck 1.B

Column No.

1.51.1-2	Card identification (2df) 1.A - Card 1.50 1.B - Card 1.51 (This card is punched 51) : 1.Z - Card 1.nn
1.51.3-5	Person identification (3df)
1.51.6	Blank
1.51.7	Blank
1.51.8-9	Occupational aspiration T-Score. (2df) 20 - twenty points 21 - twenty one points : 80 - eighty points
1.51.10-11	College aspiration level T-Scores. (2df) Computed from 1.11.56 See 1.14.8-9
1.51.12-13	I. Q. T-Scores. (2df) Computed from 1.1.68-69 See 1.51.8-9
1.51.14-15	16 PF Test T-Scores: Factor "A". (2df) Computed from 1.5.43-44 See 1.51.8-9
1.51.16-17	16PF, Factor "B" T-Scores. (2df) Computed from 1.5.45-46 See 1.51.8-9
1.51.18-19	16 PF, Factor "C" T-Scores. (2df) Computed from 1.5.47-48 See 1.51.8-9
1.51.20-21	16 PF, Factor "E" T-Scores. (2df) Computed from 1.5.49-50 See 1.51.8-9
1.51.22-23	16 PF, Factor "F" T-Scores. (2df) Computed from 1.5.51-52 See 1.51.8-9

Column No.

1.51.24-25	16 PF, Factor "G" T-Scores. (2df) Computed from 1.5.53-54.
1.51.26-27	16 PF, Factor "H" T-Scores. (2df) Computed from 1.5.55-56 See 1.51.8-9
1.51.28-29	16 PF, Factor "I" T-Scores (2df) Computed from 1.5.57-58 See 1.51.8-9
1.51.30-31	16 PF, Factor "L" T-Scores (2df) Computed from 1.5.59-60 See 1.51.8-9
1.51.32-33	16 PF, Factor "M" T-Scores. (2df) Computed from 1.5.61-62 See 1.51.8-9
1.51.34-35	16 PF, Factor "N" T-Scores (2df) Computed from 1.5.63-64 See 1.51.8-9
1.51.36-37	16 PF, Factor "O" T-Scores (2df) Computed from 1.5.65-66 See 1.51.8-9
1.51.38-39	16 PF, Factor "Q ₁ " T-Scores (2df) Computed from 1.5.67-68 See 1.51.8-9
1.51.40-41	16 PF, Factor "Q ₂ " T-Scores (2df) Computed from 1.5.69-70 See 1.51.8-9
1.51.42-43	16 PF, Factor "Q ₃ " T-Scores (2df) Computed from 1.5.71-72 See 1.51.8-9
1.51.44-45	16 PF, Factor "Q ₄ " T-Scores (2df) Computed from 1.5.73-74 See 1.51.8-9
1.51.46-47	California Test of Personality, total Adjustment T-Score (2df) Computed from 1.9.64-66 See 1.51.8-9
1.51.48-49	BUA 1 T-Score (2df) Computed from 1.6.50 See 1.51.8-9
1.51.50-51	BUA 2 T-Score (2df) Computed from 1.6.51 See 1.51.8-9
1.51.52-53	BUA 3 T-Score (2df) Computed from 1.6.52 See 1.51.8-9
1.51.54-55	BUA 4 T-Score (2df) Computed from 1.6.53 See 1.51.8-9

Column No.

- 1.51.56-57 BUA 5 T-Score (2df)
Computed from 1.6.54 See 1.51.8-9
- 1.51.58-59 BUA 6 T-Score (2df)
Computed from 1.6.55 See 1.51.8-9
- 1.51.60-61 G.P.A. 1956-1957: T-Scores (2df)
Computed from 1.12.69-71 See 1.51.8-9
(Same as 1.14.74-75)
- 1.51.62-63 Number of Siblings in ego's family, including ego
(OPMY QV 1, 2, 3, 4)
01 - ego only
02 - two
:
nn - the largest family
yy - no information but ego is not an only child
(same as 1.12.26-27)
- 1.51.64-65 Ego's ordinal position in the sib group (OPMY QV 1, 2, 3, 4) (2df)
01 - eldest (or only)
02 - second eldest
:
nn - youngest in the largest family
yy - no information but ego is not an only child
(same as 1.12.28-29)
- 1.51.66 Summary variable of ego's sib group structural position
(OPMY QV 1, 2, 3, 4)
0 - ego is an only child
1 - ego is a member of a small family: sib group size is three
or less.
2 - ego is the eldest child in a large family (sib group size
is four or more)
3 - ego is the second child in a large family (sib group size
is four or more)
4 - ego is the youngest child in a large family (sib group size
is four or more)
5 - ego is a middle child (i.e., neither eldest, second eldest,
nor youngest) in a large family (sib group size is four or more)
y - no information, but ego is not an only child (same as 1.12.30)

Column No.

1.51.67-68

Index of Parental Concern (PC) (OPMY Q V 9-14) (2df)

00 - zero points (low PC)

01 - one point

24 - twenty four points (high PC)

yy - no answer to any or all of OPMY Q V 9-14 (include only children)
(same as 1.12.39-40)

1.52.1-2

Person identification

Leaves OPMY Data

1.52.6-7

T-Score: Number of different occupational choices (2df)
See 1.15.8-9

1.52.8-9

T-Score: Highest occupational choice (2df)
See 1.15.10-11

1.52.10-11

T-Score: Lowest occupational choice (2df)
See 1.15.12-13

1.52.12-13

T-Score: Final occupational choice (2df)
See 1.15.14-15

1.52.16-17

T-Score: Free occupational choice (2df)
See 1.15.16-17

1.52.18-19

T-Score: Mature occupational choice (2df)
See 1.15.18-19

1.52.20-21

T-Score: Mean occupational choice level (2df)
See 1.15.20-21

Leaves OAS Data

1.52.22-23

T-Score: Level of occupational aspiration (2df)
See 1.2.30-31

1.52.24-25

Question one T-Score (2df)
See 1.2.32-33

1.52.26-27

Question Two T-Score (2df)
See 1.2.34-35

Card 1.52

Lenawee OAS and OPMY Occupational Choice Data: T-Scores

Column No.

1.52.1-2

Card identification (2df)

50 - Card 1.A

51 - Card 1.B

52 - Card 1.C (This card is punched 52)

1

nn - Card 1.Z

1.52.3-5

Person identification

Lenawee OPMY Data

1.52.6-7

T-Score: Number of different occupational choices (2df)

See 1.15.8-9

1.52.8-9

T-Score: Highest occupational choice (2df)

See 1.15.10-11

1.52.10-11

T-Score: Lowest occupational choice (2df)

See 1.15.12-13

1.52.12-13

T-Score: Final occupational choice (2df)

See 1.15.14-15

1.52.14-15

T-Score: Free occupational choice (2df)

See 1.15.16-17

1.52.16-17

T-Score: Mature occupational choice (2df)

See 1.15.18-19

1.52.18-19

T-Score: Mean occupational choice level (2df)

See 1.15.20-21

Lenawee OAS Data

1.52.20-21

T-Score: Level of occupational aspiration (2df)

See 1.2.30-31

1.52.22-23

Question one T-Score (2df)

See 1.2.32-33

1.52.24-25

Question Two T-Score (2df)

See 1.2.34-35

1.52.26-27

T-Score: Highest occupational choice (2df)

See 1.15.10-11

1.52.28-29

T-Score: Lowest occupational choice (2df)

See 1.15.12-13

1.52.30-31

T-Score: Final occupational choice (2df)

See 1.15.14-15

Column Nb.

1.52.26-27	Question Three T-Score (2df) See 1.2.36-37
1.52.28-29	Question Four T-Score (2df) See 1.2.38-39
1.52.30-31	Question Five T-Score (2df) See 1.2.40-41
1.52.32-33	Question Six T-Score (2df) See 1.2.42-43
1.52.34-35	Question Seven T-Score (2df) See 1.2.44-45
1.52.36-37	Question Eight T-Score (2df) See 1.2.46-47
1.52.38-39	R-ES T-Score (2df) See 1.2.48-49
1.52.40-41	I-ES T-Score (2df) See 1.2.50-51
1.52.42-43	R-30 T-score (2df) See 1.2.52-53
1.52.44-45	I-30 T-Score (2df) See 1.2.54-55
1.52.46-47	Realistic choice level T-Score (2df) See 1.2.56-57
1.52.48-49	Idealistic choice level T-Score (2df) See 1.2.58-59
1.52.50-51	Split-half A T-Scores (2df) See 1.2.64-65
1.52.52-53	Split-half B T-Scores (2df) See 1.2.66-67

MICH. 1: Work Deck 1.D

IWM 8-59

Card 1.53 SES Factor-weighted Scores and Other Variables¹

Column No.

1.53.1-2 Card identification (2df) This card is punched 53

1.53.3-5 Person identification (3df)

1.53.6-8 BLANK

1.53.9-10 North-Hatt Prestige Score of father's lowest prestige occupation (2df)
Same as 1.11.59-60

1.53.11 Father's educational status
Same as 1.12.53

1.53.12 Mother's educational status
Same as 1.12.54

1.53.13-14 Home quality (2 df)
Same as 1.12.61-62

1.53.15-16 Home facilities (2df)
Same as 1.12.63-64

1.53.17-18 Communication facilities (2df)
Same as 1.12.65-66

1.53.19-20 Factor weighted score for index composed of
1.53.9-10, 11, 12, 13-14, 15-16, 17-18. (2df)
Factor Score = $\sum [w_1x_1, w_2x_2, \dots, w_6x_6]$
where: w = factor weight for item n and
 x_n = raw score for item n
16 - sixteen points (Scores rounded off to
17 - seventeen points nearest decimal)
:
27 - twenty-seven points

1.53.21-22 T-Score form of factor-weighted scores
Computed from 1.53.19-20
20 - twenty points
21 - twenty-one points
:
80 - eighty points

¹Columns 21-74 are in T-Score form.

Column No.

1.53.23-62	T-Scores: Same as 1.14.8-47 (OAS, College Plans, CFIQ, 16 PF, and CTP) (2df) See 1.53.21-22
1.53.63-64	BVA 6 T-Score. Same as 1.14.58-59 (2df) See 1.53.21-22
1.53.65-68	T-Scores: Same as 1.14.64-67 (PDE and PDO) (2df) See 1.53.21-22
1.53.69-74	T-Scores: Same as 1.14.70-75 (SA, SES, and GPA) (2df) See 1.53.21-22
1.53.75-76	T-Score: OPMY Mean occupational choice level (2df) Same as 1.15.20-21 See 1.53.21-22
1.53.77	" 27 (1.07.32)
1.53.78	" 28 (1.07.33)
1.53.79	" 39 (1.07.34)
1.53.80	" 45 (1.07.53)
1.53.81	" 50 (1.07.54)
1.53.82	" 52 (1.07.57)
1.53.83	" 55 (1.07.60)
1.53.84	" 53 (1.07.64)
1.53.85	" 60 (1.07.65)
1.53.86	" 76 (1.08.06)
1.53.87	" 77 (1.08.07)
1.53.88	" 80 (1.08.08)
1.53.89	" 82 (1.08.11)
1.53.90	" 89 (1.08.14)

CODE FOR CARD 1.55

Card 1.55

Column No.

1.55.1-2	Card identification 2 df. This card is punched "55."
1.55.3-5	Person Identification 3 df.
1.55.6-8	Blank
1.55.9-10	Sewell SES "T" Scores A 2df. See Deck 1.14, Col. 72-73.
1.55.11	CTP Item No. 22 (See 1.07, Col. 27.)
1.55.12	CTP No. 23 (1.07.28)
1.55.13	" 25 (1.07.30)
1.55.14	" 26 (1.07.31)
1.55.15	" 27 (1.07.32)
1.55.16	" 28 (1.07.33)
1.55.17	" 39 (1.07.44)
1.55.18	" 48 (1.07.53)
1.55.19	" 50 (1.07.55)
1.55.20	" 52 (1.07.57)
1.55.21	" 55 (1.07.60)
1.55.22	" 59 (1.07.64)
1.55.23	" 60 (1.07.65)
1.55.24	" 76 (1.08.06)
1.55.25	" 77 (1.08.07)
1.55.26	" 78 (1.08.08)
1.55.27	" 79 (1.08.09)
1.55.28	" 80 (1.08.10)
1.55.29	" 81 (1.08.11)
1.55.30	" 82 (1.08.12)

Column No.

1.55.31	CTP No. 83	(1.08.13)
1.55.32	" 84	(1.08.14)
1.55.33	" 85	(1.08.15)
1.55.34	" 86	(1.08.16)
1.55.35	" 87	(1.08.17)
1.55.36	" 88	(1.08.18)
1.55.37	" 89	(1.08.19)
1.55.38	" 90	(1.08.20)
1.55.39	" 95	(1.08.25)
1.55.40	" 122	(1.08.52)
1.55.41	" 136	(1.08.66)
1.55.42	" 137	(1.08.67)
1.55.43	" 139	(1.08.69)
1.55.44	" 140	(1.08.70)
1.55.45	" 141	(1.08.71)
1.55.46	" 142	(1.08.72)
1.55.47	" 144	(1.08.74)
1.55.48	" 145	(1.08.75)
1.55.49	" 146	(1.08.76)
1.55.50	" 147	(1.08.77)
1.55.51	" 148	(1.08.78)
1.55.52	" 150	(1.08.80)
1.55.53	" 173	(1.09.28)
1.55.54	" 178	(1.09.33)
1.55.55	" 179	(1.09.34)
1.55.56	OPMY IV. 9	(1.12.16)
1.55.57	" " 10	(1.12.17)

APPLICATION TO THE COMMISSIONER OF EDUCATION, U. S. DEPARTMENT OF HEALTH,
EDUCATION, AND WELFARE, FOR FUNDS TO SUPPORT RESEARCH UNDER THE PROVISIONS OF
PUBLIC LAW 531, 81st CONGRESS, SUBMITTED BY:

APPENDIX IV

Michigan State University on February 11, 1975

Initiated by: S. G. Haller, Associate Professor of Sociology & Anthropology

PROJECT PROPOSAL (APPENDIX A OF THE HEW-MSU CONTRACT)

Transmitted by: John Olson, Head, Department of Sociology & Anthropology

Signed: _____

**Title. Relation of Occupational Aspiration to Intelligence, Social, and
Personality Factors.**

Problem. In recent years sociologists and social anthropologists have laid considerable stress on the role of levels of aspiration in social mobility. These levels of educational and occupational aspiration. Recently, under the sponsorship of the Rockefeller Foundation and the University of Michigan, a group of sociologists completed a longitudinal study which showed that the choice of years of college completed by young men is more largely determined by the parental level of the occupations they followed in their own life than by their own personality, performance, and social position. The study also showed that the level of aspiration in college is significantly more highly correlated with the level of occupational aspiration ($r = .45$) than with (1) the level of intelligence ($r = .35$), (2) his social ability as measured by a measure of social intelligence ($r = .32$), and (3) the personality index of the study as measured by a standardized index ($r = .26$).

This conclusion is of considerable significance in that it points out some of the variables which are generally thought to be related to occupational achievement. In the past, social scientists have emphasized the role of financial status, social status, etc. in determining the level of educational attainment. Differences in the level of educational attainment are believed to produce differential levels of achievement. The present research supports the view that the level of aspiration is an important factor producing differential levels of educational achievement.

APPLICATION TO THE COMMISSIONER OF EDUCATION, U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, FOR FUNDS TO SUPPORT RESEARCH UNDER THE PROVISIONS OF PUBLIC LAW 531, 83rd CONGRESS, SUBMITTED BY:

Michigan State University on February 11, 1958

Initiated by: A. O. Haller, Associate Professor of Sociology & Anthropology

Signed: _____

Transmitted by: John Useem, Head, Department of Sociology & Anthropology

Signed: _____

Title. Relation of Occupational Aspiration to Educational, Social, and Psychological Factors.

Problem. In recent years sociologists and social psychologists have laid considerable stress on the role of levels of aspiration as motive forces influencing levels of educational and occupational achievement. Recently, under the sponsorship of the Rockefeller Foundation and the University of Wisconsin, a team of sociologists completed a longitudinal study which showed that the number of years of college completed by young men is more highly correlated with the prestige-level of the occupations they planned to enter than with any other of some thirty personality, performance, and social position variables measured during their last years in high school. The findings indicate that entering and remaining in college is significantly more highly correlated with the student's level of occupational aspiration ($r = .52$) than with (1) his college plans while in high school ($r = .40$), (2) his mental ability as measured by a standard test of intelligence ($r = .32$), and (3) the socio-economic status of his family as measured by a standardized index ($r = .28$).

This conclusion is of considerable significance because these three are some of the variables which are generally thought to produce high levels of educational achievement. In the past, socio-economic status differences (or their correlates, financial status, social class, etc.) have been held responsible for differential levels of educational attainment. Differences in intelligence also have been believed to produce differential levels of educational attainment. Recently, educational research workers have considered academic achievement motivation to be an important factor producing differential levels of educational achievement.

Thus, it is important to learn that level of occupational aspiration is more highly correlated with years of college completed than are any of these variables. Practically, this finding suggests that if educators wish to interest young people in beginning and continuing college they should increase the student's interests in and knowledge of the high-prestige occupations, such as lawyer, scientist, doctor, etc. The student's new commitment to a higher level of the occupational world should tend to motivate him to begin and remain in college.

In summary, the fact that aspiration is more highly correlated with level of college attainment than are other important variables suggests that it needs to be studied more thoroughly. Its practical advantage over academic achievement motivation is that, if anything, it is a more complete determiner of educational achievement; and it not only shares the same advantage over intelligence and parental socio-economic status but is probably easier to change than these variables. However, considerable research will be needed before it is brought under control.

The first steps in the scientific understanding of level of occupational aspiration are to obtain instruments for measuring it, and to learn the social and psychological conditions under which it varies. The purposes of the proposed study are: (1) to study the reliability, validity, and internal structure of a new instrument developed to measure levels of occupational aspiration of youth; and (2) to show the extent to which the test scores of youth vary with specific personality traits, family educational and social status, rural-urban residence, peer-group levels of occupational aspiration, and other socio-psychologically significant variables.

The study will have importance to the field of education in that it will show the measureability of a motive (level of occupational aspiration) which sustains young people in their attainment of higher education, it will provide a knowledge of the factorial structure of the motive, and it will provide basic data on social psychological factors which produce lesser and greater degrees of this motive.

Related Research. The instrument under discussion was developed out of the writer's experience on the Rockefeller Foundation and the University of Wisconsin's study of educational and occupational achievement (unpublished), out of the National Opinion Research Center's study of the prestige of ninety occupations (National Opinion Research Center, "Jobs and Occupations: A Popular Evaluation," *Opinion News* 9, September, 1947, pp. 3-13), and out of the experience and thinking of a number of sociologists and educators concerning the role of occupational aspiration levels in the achievement of success in the United States. (For a review of these and related studies, see Ralph F. Berdie, *After High School - What?*, Minneapolis: University of Minnesota Press, 1954; Bryon S. Hollinshead, *Who Should Go to College?*, New York: Columbia University Press, 1953; and W. H. Sewell, A. O. Haller, and M. A. Straus, "Social Status and Levels of Educational and Occupational Aspiration", *American Sociological Review* 22, February, 1957, pp. 67-73.). In the first-mentioned study, an index composed of the first orthogonal

factor in the matrix of correlations of the National Opinion Research Center prestige levels of students' highest, lowest, free, and final occupational choices was developed to measure level of occupational aspiration. It was this measure which produced the findings reported above. Detailed analysis of the matrix showed two highly correlated factors, which were called "idealistic level of occupational aspiration" and "realistic level of occupational aspiration." These are apparently similar to the factors Stephenson has called "vocational aspiration" and "vocational plan." (R. M. Stephenson, "Realism of Vocational Choice: A Critique and an Example," The Personnel and Guidance Journal 35, April 1957, pp. 482-488.) This study also investigated the youths' level of occupational aspiration for the period after his career is well underway, showing that level of occupational aspiration could be more effectively measured by taking into account this later stage of the person's career.

These studies lead directly to the present instrument. It consists of eight questions: (1) two levels, realistic ("the job I'm sure I can get") and idealistic ("the job I'd prefer if I had my choice"), (2) two career periods, initial ("when my schooling is finished") and mature ("when I'm 30 years old"), and (3) each of the four possible combinations of these repeated. Each question includes ten alternative occupational choices. The occupational alternatives for each question were selected by rank-ordering the 80 most appropriate of the NCRC occupations and placing the highest in question 1, the second highest in question 2, and so on down to the lowest in question 8. Thus, the alternatives for each question systematically span the entire range of occupational prestige.

The probable advantages of this instrument over previous methods for measuring level of occupational aspiration are: (1) Coding of free responses, used in most sociological studies, is subject to error due to a. the failure of some subjects to choose an occupation, b. the lack of specificity in some persons' choices, and c. the wide variation in the prestige of certain occupations. (2) Other forced-choice instruments for measuring level of occupational interest (such as Strong's or that of the California Test Bureau) are not highly correlated with educational and occupational achievement, probably because they are not founded upon unbiased estimates of the prestige of a full range of occupations. (3) McClelland's n-achievement is more general than level of occupational aspiration, and the technique for measuring it is difficult to administer and score. (D. C. McClelland, et. al., The Achievement Motive, New York Appleton Publishing Company, 1953). Preliminary studies of the new instrument appear to show that it has the anticipated advantages over previous attempts to measure the same or similar dimensions.

Procedure: Work already accomplished. Data were gathered from all 442 seventeen-year old boys in school in Lenawee County, Michigan during the spring of 1957. This county was chosen because it contains within the same ecological community (1) good farming, (2) light industry, (3) proximity to the Detroit industrial area, (4) a fairly equal balance of farm, rural nonfarm and urban people, and (5) a full range of the American social class levels. All schools in the county cooperated. Tests administered (by trained social psychologists) included (1) Cattell's "16 PF Test"; (2) "The California Test of Personality"; (3) Cattell's "Test of G-Culture Free"; (4) A standard questionnaire on educational and occupational aspirations, family background, sociometric questions

and related data; and (5) The "Occupational Aspiration Scale," the test under consideration.

Seventeen year-olds were selected as subjects because of the need to study youth whose aspiration levels are well established, but who have not yet entered college or the labor market, while avoiding the intellectual and aspirational sampling bias commonly encountered when school classes rather than age-groups are studied. Girls were omitted to keep the sample size small enough for complex multivariate analyses. The total in-school population of the county was studied so as to facilitate measurement of relevant variables on all seventeen year-old members of the subjects' sociometric cliques. All data have been cast in the form of quantitative indexes in preparation for machine analysis.

Procedure: Work remaining to be done. Assistance from federal funds is requested to aid in the preparation of the data for machine analysis, to undertake the specific analyses listed below, and to provide them to write up the analyses for publication.

All data will be punched and verified for IBM machine analysis, and will be translated into punched tape for high-speed computer analysis.

After this is completed, the following statistical studies will be made:

- A. Analysis of the nature of the level of occupational aspiration test (OAS)
 - (1) Tests of reliability: split-half technique, test-retest technique. The tests of reliability will require new OAS data to be taken on about 100 persons at two different times several months apart. These data will be punched on IBM cards for machine analysis. Distributions must be checked for normality and normalized if necessary. Correlation of the two halves of the test and of the whole test at different times will be computed.
 - (2) Test validity: correlation of normalized OAS responses with level of occupational aspiration as measured by prestige ratings of occupations actually considered by the students. This will require the construction and normalization of a new measure of level of occupational aspiration based on questionnaire data already gathered from the 442 subjects. Depending upon which of several alternatives are found to be most appropriate for the data, this may require computing from five to six to eleven correlation coefficients, and may also require the construction of a factor-weighted index of level of occupational aspiration.
 - (3) Study of internal structure: a factor-analysis of the inter-item correlations of the OAS. This study will require normalizing the distributions of responses to each of the eight items of the OAS, computing twenty-eight correlation coefficients for those of the 442 for whom data are complete, and factor analyzing the resulting 8 x 8 correlation matrix.
- B. Analyses of the variation of level of occupational aspiration under different psychological and sociological conditions. This will be based upon all of the 442 students for whom data are complete.

- (4) Measurement of the amount of correlation of the OAS with each of Cattell's 16 personality factor scores. This will require normalizing the distribution of each of 16 personality variables, and computing correlation between each of these variables and the OAS scores.
- (5) Measurement of the amount of correlation of the OAS with parental social status. This will require restandardizing a multiple-item index of parental social status, and computing the correlation of social status to OAS. In addition, this study will explore the possibility of more effectively measuring parental social status by means of other indices. This will involve computing five to twenty-five correlation coefficients and may involve factor analyses of one or two correlation matrices varying in size from 4×4 to 8×8 . The objective of this exploration will be to develop an accurate method for measuring parental social status, thus permitting the most accurate estimate of the correlation between parental social status and level of occupational aspiration.
- (6) Measurement of the amount of correlation of the OAS with degree to which parents desire success for the subject. This study will involve constructing analyzing and standardizing a multiple-item index, composed of father's and mother's desire of the subject's high achievement in education and occupation. Several specific methods will be explored for combining the items of the latter index. This will involve about six inter-subscore correlations, and their respective normalizations, a possible factor analysis of the resulting matrix, and constructor of a weighted index of parents desire for the student's success and level of occupational aspiration.
- (7) Measurement of the amount of correlation of level of occupational aspiration to the average level of occupational aspiration of peers. This will involve identifying the student's best friends and averaging their OAS scores, then correlating the resulting average with the student's level of occupational aspiration.

The results of these analyses will be reported as a monograph or articles for appropriate educational, sociological, and psychological journals.

Principal Investigator. The principal investigator is A. O. Haller, Associate Professor of Sociology and Anthropology at Michigan State University. Dr. Haller received his B.A. degree in Sociology from Hamline University in Saint Paul, Minnesota, in 1950, his M.A. degree in Sociology from the University of Minnesota in 1951, and his Ph.D. degree in Sociology from the University of Wisconsin in 1954. He is well trained in social psychology and research methods, having held several social psychological research assistantships and fellowships as a graduate student, and having been employed by the University of Wisconsin as a project associate for social psychological research from 1954 to 1956. In 1956, he joined the staff of Michigan State University to teach social psychology and research methods and to conduct social psychological research for the Michigan State Agricultural Experiment Station. His research writings directly relating to this problem include: (with D. G. Marshall and W. H. Sewell) "Factors Associated with High-School Attendance of Wisconsin Farm Youth", Rural Sociology 18, September 1953; (with others) "Factors Associated with Attitude Toward High-School Education in Rural Wisconsin", Rural Sociology 18, December 1953; (with W. H. Sewell and M. A. Straus), "Social Status and Educational and Occupational Aspiration", American Sociological Review 22, February 1957; (with W. H. Sewell), "Farm Residence and Levels of Educational and Occupational Aspiration", American Journal of Sociology 62, January 1957; and "The Influence of Planning to Enter Farming on Plans to Attend College", Rural Sociology 22, June 1957.

Facilities. The Department of Sociology and Anthropology at Michigan State University has a group of able graduate students from which to draw for assistance in conducting the analyses. The facilities of the M.S.U. Tabulating Department are available to the study, as is the University's new high-speed computer. Storage space, desks, typewriters, desk calculators, and other materials are available in the department. The staff of the University includes research personnel available for consultation in the Department of Sociology and Anthropology. Statistics, Psychology and in its College of Education.

Other Support. Support for the collection of the data was provided by Michigan State University. The University is also supporting other aspects of the analysis. In addition to money it will commit during the period for which federal funds are requested, the University has spent \$10,250 on this project.

APPENDIX V

MEANS AND STANDARD DEVIATIONS OF LENAWEE COUNTY RAW DATA

MEANS, STANDARD DEVIATIONS, AND SAMPLE SIZES OF UNSTANDARDIZED
SCORES FOR ALL VARIABLES IN ALL CORRELATION MATRICES

Location in Text	Variable No.	Name of Variable	Location in Coding Key	Data		
Table No.			Card Column	$\bar{X}$	S.D.	N
12	1	R-S	1. 2. 6	3.05	2.06	441
	2	I-S	1. 2. 7	5.16	3.08	441
	3	R-S	1. 2. 8	2.93	2.32	441
	4	I-S	1. 2. 9	4.60	2.08	440
	5	R-L	1. 2.10	3.95	2.84	438
	6	I-L	1. 2.11	5.36	2.18	440
	7	R-L	1. 2.12	4.47	2.25	439
	8	I-L	1. 2.13	5.98	2.21	439
13	1	R-S	1.16.24	3.13	2.06	85
	2	I-S	1.16.25	4.90	2.87	85
	3	R-S	1.16.26	2.87	2.19	85
	4	I-S	1.16.27	4.73	1.78	85
	5	R-L	1.16.28	3.85	2.83	85
	6	I-L	1.16.29	5.82	2.07	85
	7	R-L	1.16.30	4.35	2.36	85
	8	I-L	1.16.31	6.02	2.17	85
14	1	R-S	1.16.50	5.05	2.45	85
	2	I-S	1.16.51	5.62	2.06	85
	3	R-S	1.16.52	4.52	2.16	85
	4	I-S	1.16.53	5.21	2.85	85
	5	R-L	1.16.54	4.16	1.76	85
	6	I-L	1.16.55	4.85	2.54	85
	7	R-L	1.16.56	4.15	2.55	85
	8	I-L	1.16.57	4.52	2.50	85
18*	1	Highest	1.11.29-30	79.61	7.14	437
	2	Lowest	1.11.31-32	64.25	9.84	437
	3	Plan	1.11.33-34	72.86	9.48	411
	4	Free	1.11.35-36	74.50	9.63	406
	5	Mature	1.11.37-38	74.35	9.00	392

*Note: Variables 1 through 5 in this table are labeled X_1 through X_5 in Table 18 in the body of the text. The remaining 8 variables (X_6 through X_{13}) in Table 18 are omitted here, because they are identical to Variables 1-8 of Table 12 (X_6 =Variable 1, X_7 =Variable 2, . . . X_{13} =Variable 8).

Appendix Table
p. 13

1	Occupational Aspiration Scale Scores	1.14. 8- 9	36.20	12.99	441
2	College Aspiration Level (Approx. years)	1.14.10-11	2.25	2.48	438
3	C.F.I.Q. Scores	1.14.12-13	20.64	5.02	441
4	16 PF: Factor "A"	1.14.14-15	8.37	3.31	440

Location in Text Table No.	Variable No.	Name of Variable	Location in Coding Key Card Column	Data		
				X	S.D.	N
Appendix Table P. 13 (Cont'd.)	5	16 PF: Factor "B"	1.14.16-17	7.47	1.96	440
	6	" " "C"	1.14.18-19	14.77	3.96	440
	7	" " "E"	1.14.20-21	10.49	4.18	440
	8	" " "F"	1.14.22-23	14.40	3.93	440
	9	" " "G"	1.14.24-25	12.46	2.20	440
	10	" " "H"	1.14.26-27	15.36	4.82	440
	11	" " "I"	1.14.28-29	8.22	3.19	440
	12	" " "L"	1.14.30-31	10.57	2.56	440
	13	" " "M"	1.14.32-33	10.18	3.40	440
	14	" " "N"	1.14.34-35	11.07	2.85	440
	15	" " "O"	1.14.36-37	11.54	5.04	440
	16	" " "Q ₁ "	1.14.38-39	9.94	2.86	440
	17	" " "Q ₂ "	1.14.40-41	9.42	3.03	440
	18	" " "Q ₃ "	1.14.42-43	12.15	3.54	440
	19	" " "Q ₄ "	1.14.44-45	10.66	4.65	440
	20	CTP: Total Adjustment Score	1.14.46-47	132.75	25.49	437
	21	BVA 1	1.14.48-49	6.60	1.20	441
	22	BVA 2	1.14.50-51	5.58	1.66	441
	23	BVA 3	1.14.52-53	3.18	1.04	440
	24	BVA 4	1.14.54-55	6.31	0.94	440
	25	BVA 5	1.14.56-57	5.87	1.49	440
	26	BVA 6	1.14.58-59	5.46	1.03	440
	27	Occupational Crystallization	1.14.60-61	2.05	0.78	438
	28	Father's education status	1.14.62-63	2.26	1.29	436
	29	Parental desire for ego's post-high school educational mobility	1.14.64-65	6.35	1.72	436
	30	Parental desire for ego's high occupational achievement	1.14.66-67	4.68	2.32	436
	32	Status anxiety	1.14.70-71	3.02	1.61	435
	33	Sewell S.E.S. Scores	1.14.72-73	87.22	6.29	432
	34	Grade point average: 1956-1957	1.14.74-75	2.03	82.74	437
	35	Number of agricultural courses through 1957	1.14.76-77	1.21	2.26	438

Note: Two variables are omitted from this table. These are variable numbers 31 and 36. Explanation of omissions is contained in Appendix Table, page 13.